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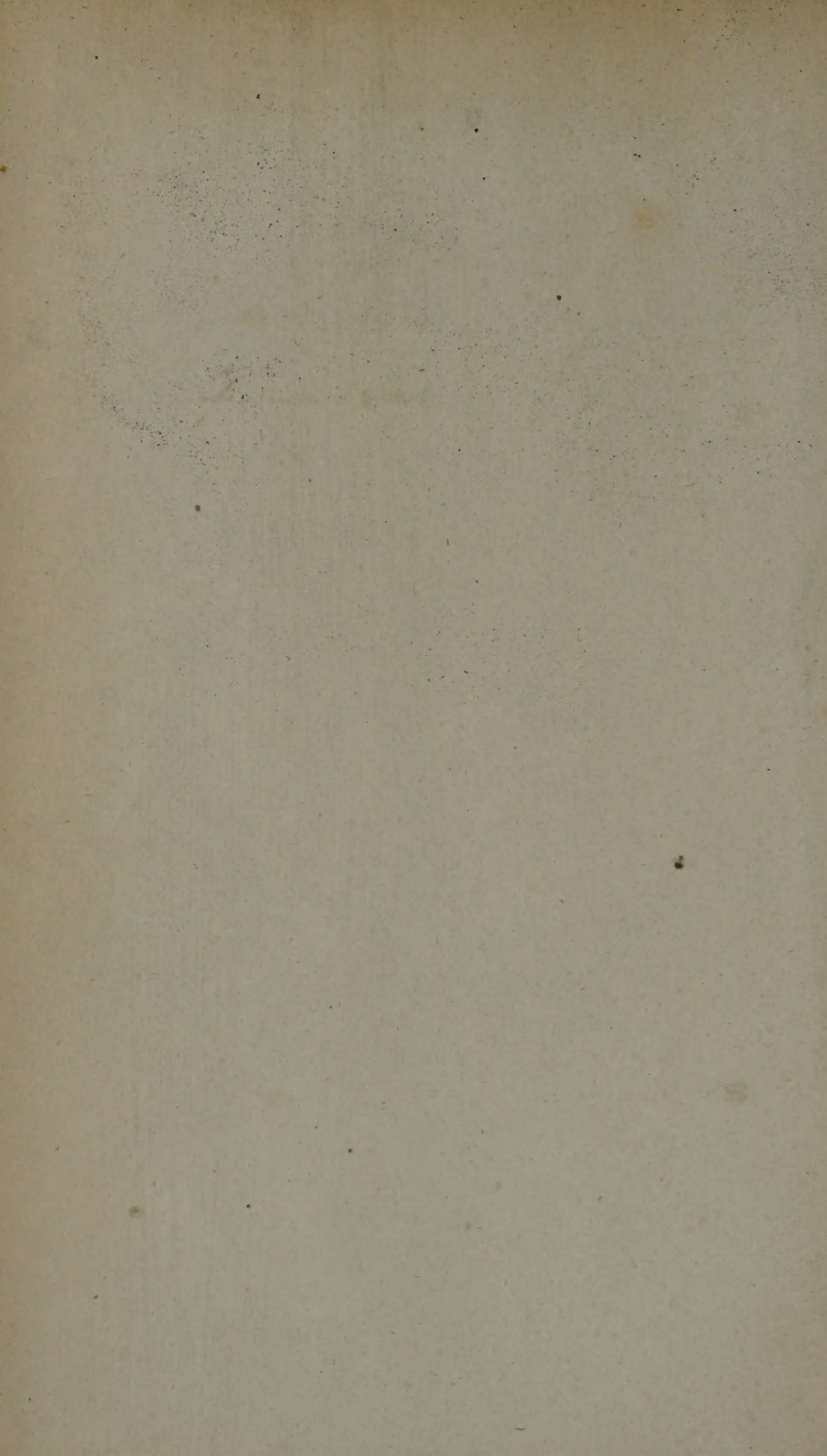
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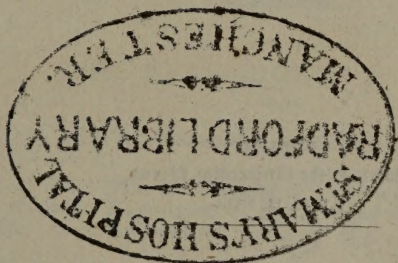








THE DUBLIN  
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OF  
MEDICAL SCIENCE.



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  - ii. Clinical Lectures on the Diseases of Women and Children. By Gunning S. Bedford, A. M., M. D.; Professor of Obstetrics, the Diseases of Women and Children, and Clinical Midwifery in the University of New York. Sixth edition, carefully revised and enlarged.
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1. On Asthma; its Pathology and Treatment. By Henry Hyde Salter, M. D., F. R. S., &c. London: Churchill, 1860. 8vo. pp. 372.
2. The Management of Infancy, Physiological and Moral; intended chiefly for the use of Parents. By Andrew Combe, M. D., &c. Ninth edition. Revised and edited by Sir James Clark, Bart., M. D., F. R. S., &c. Edinburgh: Maclachlan and Stewart, 1860. Post 8vo. pp. 302.
3. Mind and Brain; or, the Correlations of Consciousness and Organization, with their Applications to Philosophy, Zoology, Physiology, Mental Pathology, and the Practice of Medicine. By Thomas Laycock, M. D., &c., Professor of Practice of Medicine in the University of Edinburgh. With Illustrations. Edinburgh: Sutherland and Knox, 1860. 2 vols. Post 8vo. pp. 404 and 480.
4. Original Contributions to the Practice of Conservative Surgery; being a Selection from the Surgical Cases occurring in the Practice of James G. Beaney, M. R. C. S. E., &c. Melbourne: G. Robertson, 1859. 8vo. pp. 168.
5. Operative Surgery. Adapted to the Living and the Dead Subject. By C. F. Maunder, F. R. C. S., &c. London: Churchill, 1860. Part I, pp. 144.
6. A Manual of Anæsthetics, Theoretical and Practical. By Charles Kidd, M. D., &c. New edition. London: Renshaw, 1859. 12mo. pp. 249.
7. The Medical Knowledge of Shakespeare. By John C. Bucknill, M. D., F. R. C. P., &c. London: Longman and Co., 1860. 8vo. pp. 292.
8. The Theory and Practice of Midwifery. By Fleetwood Churchill, M. D., &c., &c. Fourth Edition. Corrected and enlarged. London: Renshaw. Dublin: Fannin, 1860. Fcap. 8vo. pp. 705.
9. Transactions of the Obstetrical Society of London. Vol. I, for the year 1859. Together with a Report of the Inaugural Meeting of the Society, a List of Officers, Fellows, &c. London: Longmans, 1860. 8vo. pp. 347.
10. Clinical Lectures on the Diseases of Women and Children. By Gunning S. Bedford, A. M., M. D., &c. Sixth edition, carefully revised and enlarged. New York: S. S. and W. Wood, 1860. 8vo. pp. 653.
11. Practical Observations on the Cure of Syphilitic Affections by the Aix-la-Chapelle Hot Sulphureous Waters. By L. Wetzlar, M. D. Aix-la-Chapelle: Benrath and Vogelgesang, 1860. Pamphlet, pp. 29.

12. Rational Medicine; its Position and Prospects. An Oration delivered before the Hunterian Society on the 15th February, 1860. By J. H. Ward, M. D., &c. London: Churchill, 1860. Pamphlet, pp. 52.

13. Archives of Medicine. A Record of Practical Observations, and Anatomical and Chemical Researches connected with the Investigation and Treatment of Disease. Edited by Lionel S. Beale, M. B., &c. No. V. London: Churchill, 1860.

14. Christian Revivals: their History and Natural History. By John Chapman, M. D., &c. Reprint. London: Mainwaring, 1860. 8vo. pp. 53.

15. The Turkish Bath. By W. J. Cummins, M. D., &c. Reprint. Dublin: O'Toole, 1860. Pamphlet, pp. 48.

16. Ninth Annual Report of the Wilts County Asylum, Devizes, for the year 1859. 1860. Pamphlet, pp. 51.

17. De la Circulation du Sang dans les Membres et dans la Tête chez l'Homme. Par J. P. Suequet, M. D., &c. Paris: J. B. Baillière et Fils, 1860. Pamphlet, pp. 55.

18. De la Galvanisation par Influence appliquée au Traitement des Déviations de la Colonne Vertébrale, des Maladies de la Poitrine, des Abaissements de l'Utérus, &c. Par le Docteur J. Seiller. Paris: J. B. Baillière et Fils, 1860. 8vo. pp. 158.

19. St. Luke's Hospital for Lunatics. Report for the Year 1859. 8vo. pp. 40.

20. Chapters on Diseases of the Ovaries. Translated, by permission, from Kiwisch's Clinical Lectures on the Special Pathology and Treatment of the Diseases of Women. With Notes and an Appendix on the Operation of Ovariectomy. By John Clay, M. R. C. S. E., &c. London: Churchill, 1860. 8vo. pp. 254 and clxxvi.

21. On Diseases of the Prostate Gland. By James Stannus Hughes, F. R. C. S. I., &c. Dublin: Fannin and Co., 1860. Post 8vo. pp. 63.

22. Bidrag til Kunskaab om de Sindssyge i Norge. Af Ludvig Dahl, Reservelæge ved Gaustad Sindssygeasyl. Christiania: Det Steenske Bogtrykkeri, 1859. 8vo. pp. 305. With three illustrative Maps.

23. On Diabetes and its successful Treatment. By John M. Camplin, M. D., F. L. S. Second Edition, revised and enlarged. London: Churchill, 1860. 12mo. pp. 88.

24. Small Pox and Vaccination historically and medically considered. An Inquiry into the Causes of the recent Increase of Small Pox, and the Means for its Prevention. By Alfred Collinson, M. D. London: Hatchard and Co., 1860. 8vo. pp. 85.

25. The Thermo-Electrical, or Natural System of Medicine. The Science of Life, Health, and Disease: explanatory of the Mysteries of Man's Existence, and all the Phenomena of Life; with the Nature, Causes, and Treatment of Disease. The Fruits of Forty Years' Experience. By Charles Searle, M. D., M. R. C. S. E., &c. London: Booth, 1860. 8vo. pp. 284.

26. Illustrations of Puerperal Fever. By Edward Copeman, M. D., &c. London: Churchill, 1860. 8vo. pp. 137.

27. Thirtieth Annual Report of the Belfast District Asylum for the Insane Poor. 1860. Pamphlet, pp. 36.
28. The Dublin Cowpock Institution and its Charge for Vaccine Lymph, viewed in Relation to the Prevalence of Small Pox in England and Ireland. By P. W. Long, M. D., M. R. C. S. E. Dublin: Kelly, 1860. Pamphlet, pp. 24.
29. A Manual of Human Microscopic Anatomy. By A. Kölliker, Professor of Anatomy and Physiology in the University of Würzburg. With 249 Illustrations. London: Parker and Son, 1860. 8vo. pp. 633.
30. Twenty-second Annual Report of the Suffolk Lunatic Asylum. 1860. Pamphlet, pp. 51.
31. Diseases of the Heart; their Pathology, Diagnosis, and Treatment. By W. O. Markham, M. D., &c. Second Edition. London: Churchill, 1860. 12mo. pp. 276.
32. On the Nature, Prevention, Treatment, and Cure of Spinal Curvatures and Deformities of the Chest and Limbs, without Artificial Supports or any Mechanical Appliances. By Mrs. Godfrey. Third Edition. London: Churchill, 1860. 8vo. pp. 131.
33. The Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias; comprising standard and approved Formulæ for the Preparations and Compounds employed in Medical Practice. Seventh Edition. London: Churchill, 1860. 16mo. pp. 546.
34. Case of Paralysis as to voluntary Motor Power of the Limbs on one Side of the Body, attended by Hyperæsthesia as regards the Impressions of Pinching and Pricking on the corresponding Side of the Face; the Result of Compression on certain lateral Parts of the Brain, from an intra-cranial Aneurism; with Observations on "Induced" Cerebral Paralysis. By John W. Ogle, M. D., &c. London, 1860. Reprint. Pamphlet, pp. 28.
35. A Clinical Treatise on Diseases of the Liver. By Dr. Fried. Theod. Frerichs, Professor of Clinical Medicine in the University of Berlin. In two volumes. Translated by Charles Murchison, M. D., &c. London: the New Sydenham Society. Vol. I. 8vo. pp. 402.
36. *Traité des Tumeurs de l'Orbite.* Par M. Demarquay. Paris: Victor Masson, 1860. 8vo. pp. 584.
37. The Address of John Charles Bucknill, M. D., President of the Association of Medical Officers of Asylums and Hospitals for the Insane. Exeter: Pollard, 1860. Pamphlet, pp. 29.
38. Skin Diseases and their Remedies. By Robert J. Jordan, M. D., &c. London: Churchill, 1860. Fcap. 8vo. pp. 283.



PERIODICALS WITH WHICH THE DUBLIN QUARTERLY  
JOURNAL IS EXCHANGED.

## GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. Published Quarterly. London: Churchill. (Received regularly.)

2. The Edinburgh Medical Journal. Published Monthly. Edinburgh: Sutherland and Knox. (Received regularly.)

3. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Received regularly.)

4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. London: Churchill. (Received regularly.)

5. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)

6. The Lancet. A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News. Edited by Thomas Wakley, Surgeon. Published Weekly. London. (Received regularly.)

7. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)

8. Association Medical Journal. Edited by A. Wynter, M. D. Published Weekly. London: Honeyman. (Received regularly.)

9. The Medical Circular. Published Weekly. London: Harris. (Received regularly.)

10. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received regularly.)

11. The Asylum Journal of Mental Science. Edited by J. C. Bucknill, M. D. London: Longmans. (Received regularly.)

12. The Glasgow Medical Journal. Published Quarterly. Griffin and Co. (Received regularly.)

13. The Athenæum—Journal of English and Foreign Literature, Science, &c. Published Weekly. London. (Received regularly.)

14. The Dublin Medical Press. Published Weekly. (Received regularly.)

15. The Dublin Hospital Gazette. Published twice a Month. (Received regularly.)

16. The Natural History Review : including the Transactions of the Irish Natural History Societies, and of the Geological Society of Dublin. Published Quarterly. Dublin: George Herbert. (Received irregularly.)

#### INDIA.

17. The Indian Annals of Medical Science ; or, Half-Yearly Journal of Practical Medicine and Surgery. Calcutta: Lepage and Co. (Received regularly.)

18. Transactions of the Medical and Physical Society of Bombay. Printed at the Bombay Education Society's Press. (Received regularly.)

#### AUSTRALIA.

19. The Australian Medical Journal. Melbourne: Buzzard. Published Quarterly. (Received regularly.)

#### AMERICA.

20. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Published Quarterly. Philadelphia: Blanchard and Lea. (Received regularly.)

21. The North American Medico-Chirurgical Review. A Bi-monthly Journal. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. Philadelphia: Lippincott and Co. (Received regularly.)

22. The New York Journal of Medicine. Edited by Stephen Smith, M. D. Published Monthly. New York. (Received regularly.)

23. The American Journal of Science and Arts ; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. Published Bi-monthly. New Haven. (Received regularly.)

24. The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica, Quarterly. (Received very irregularly.)

25. The American Journal of Dental Science. Edited by C. A. Harris, M. D., and A. S. Piggot, M. D. Published Quarterly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

26. Charleston Medical Journal and Review. Published Monthly. Charleston, U. S. (Received regularly.)

27. The Boston Medical and Surgical Journal. Edited by F. E. Oliver, M. D., and Calvin Ellis, M. D. Published Weekly. (Received regularly, but always subject to Postage.)

28. *Peninsular and Independent Medical Journal*, Detroit, Michigan. Edited by A. B. Palmer, M. D., Moses Gunn, M. D., and Mr. Stearnes, Pharmacist. (As we have not received this Journal, we shall remove it from our Exchange List.)

## FRANCE.

29. *Gazette Médicale de Paris*. Published Weekly. Paris. (Received regularly.)

30. *Gazette Hebdomadaire de Médecine et de Chirurgie*. Published Weekly. Paris: Victor Masson. (Received regularly.)

31. *Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c.* Published Monthly. Paris: Labé. (Received regularly.)

32. *Journal de Pharmacie et de Chimie, &c.* Published Monthly. Paris: Victor Masson. (Received regularly.)

33. *L'Union Médicale, Journal des intérêts scientifiques et pratiques, moraux et professionnels du Corps médical*. Published three times a Week. Paris. (Received regularly.)

34. *La Lancette Française, Gazette des Hôpitaux civils et militaires*. Published three times a Week. Paris. (Received regularly.)

35. *Le Moniteur des Sciences Médicales et Pharmaceutiques*. Rédacteur en chef, M. H. de Castelnau. Paris. Published three times a Week. (Received regularly.)

36. *Revue Médicale Française et étrangère, Journal des Progrès de la Médecine Hippocratique*. Published twice a Month. Publié par le Docteur Sales-Girons. Paris. (Received regularly.)

37. *Archives Générales de Médecine; Journal Complémentaire des Sciences Médicales*. Published Monthly. Paris: Labé. (Received regularly.)

38. *Bulletin de l'Académie de Médecine*. Published Monthly. Paris: Baillière. (Received regularly.)

39. *Mémoires de l'Académie de Médecine*. (Received regularly.)

40. *Revue de Thérapeutique Médico-Chirurgicale*. Published twice a Month. Paris: Dr. A. Martin-Lauzer. (Received regularly.)

41. *Journal de Médecine et de Chirurgie Pratiques à l'Usage des Médecins*. Published Monthly. Par Lucas-Championnière. Paris. (Received regularly.)

42. *Journal des Connaissances Médicales pratiques et de Pharmacologie*. Published every ten days. Paris. (Received regularly.)

43. *Annales Médico-Psychologiques*. Par MM. Baillarger, Cerise, et Moreau. Published Quarterly. Paris: Victor Masson. (Received regularly.)

44. *Bulletin Général de Thérapeutique, Médicale et Chirurgicale*. Recueil pratique. Par le Docteur Debout. Published twice a Month. Paris. (Received regularly.)

45. *Repertoire de Pharmacie*. Recueil pratique. Par M. le Dr. Bouchardat. Published Monthly. (Received regularly.)

46. *Gazette Médicale de Strasbourg*. Published Monthly. (Received regularly.)

47. *Journal de Médecine de Bordeaux*. Redacteur en chef, M. Costes. Published Monthly. (Received regularly.)

48. *L'Union Médicale de la Gironde*. Bordeaux. Published Monthly. (Received regularly.)

49. *Annales D'Hygiène Publique et de Médecine Légale*. Paris. Published Quarterly. (Received regularly.)

50. *Gazette Médicale de Lyon*. Dirigée par le Dr. P. Diday. Published Bi-Monthly. (Received regularly.)

51. *Journal de la Physiologie de l'Homme et des Animaux*. Publié sous la Direction du Docteur E. Brown-Séquard. Paris: Masson. Published Quarterly. (Received regularly.)

#### BELGIUM.

52. *Annales D'Oculistique*. Fondées par le Docteur Florent Cunier. Published Monthly. Brussels. (Received regularly.)

53. *Annales et Bulletin de la Société de Médecine de Gand*. Published Monthly. (Received regularly.)

#### GERMANY.

54. *Zeitschrift für rationelle Medicin*; herausgegeben Von Dr. J. Henle und Dr. C. v. Pfeufer. Published Monthly. Heidelberg and Leipzig: C. F. Winter. (Received regularly.)

55. *Zeitschrift der Kais. Kön. Gesellschaft der Aerzte zu Wien*. Redacteur: Professor, Dr. Ferdinand Hebra. Vienna: Gerold. (Received irregularly.)

56. *Vierteljahrsschrift für die praktische Heilkunde*, herausgegeben von der medicinischen Facultät in Prag. Published Quarterly. Prague: Karm André. (Received regularly.)

57. *Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern*. Redigirt von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Würzburg: Stahel. (Received regularly.)



58. Journal für Kinderkrankheiten. Herausgegeben von Dr. Fr. J. Behrend und Dr. A. Hildebrand. Published Monthly. Erlangen: Palm and Enke. (Received irregularly.)

59. Wochenblatt der Zeitschrift der Kaiserl. Königl. Gesellschaft der Aerzte zu Wien. Published Weekly. Vienna: Gerold. (Received regularly.)

60. Aerztliches Intelligenz-Blatt. Organ für Bayerns Staatliche und öffentliche Heilkunde. Munich: C. Kaiser. (Received regularly.)

#### PRUSSIA.

61. Archiv für pathologische Anatomie und Physiologie, &c., Herausgegeben von R. Virchow. Berlin: G. Reimer. Published Monthly. (Received regularly.)

#### HOLLAND.

62. Archiv für die Holländischen Beiträge zur Natur- und Heilkunde. Herausgegeben von F. C. Donders, Utrecht, und W. Berlin, Amsterdam. Utrecht: Kemink and Zoon. (Received regularly.)

#### NORWAY.

63. Norsk Magazin, for Lægevidenskaben, udgivet af det medicinsk. Selskab i Christiania. Redigeret af W. Boeck. Faye. A. W. Münster. Lund: Voss. Published Monthly. Christiania: Feilberg & Landmark. (Received regularly.)

#### SWEDEN.

64. Hygiea, Medicinsk och Pharmaceutisk Månads-Skrift. Published Monthly. Stockholm. (Received regularly.)

#### DENMARK.

65. Bibliothek for Læger. Udgivet af Direktionen for det Classenske Litteraturselskab. Redigeret af Dr. E. Dahlerup. Copenhagen: Reitzels. (Received regularly.)

#### ITALY.

66. Bulletino delle Scienze Mediche. Pubblicato per cura della Società Medico-Chirurgica di Bologna. Published Monthly. (Received regularly.)

67. Giornale Veneto di Scienze Mediche. Published Monthly. (Received regularly.)

68. Lo Sperimentale ovvero Giornale Critico di Medicina e Chirurgia per servire al Bisogni dell'Arte Salutare. Direttore Prof. C. C. M. Bufalini. Published Monthly. Florence. (Received regularly.)

## NOTICE TO CORRESPONDENTS.

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Books and Periodicals published in Northern Europe and the German States, intended for our Journal, should be transmitted "For the Editor of the Dublin Quarterly Medical Journal, care of Messrs. Trübner and Co., London," *through their Correspondents* in the principal Towns on the Continent. Our Correspondents in France, Belgium, Italy, and Spain, are requested to communicate with us through "Doctor Higgins, 212, Rue Rivoli, Paris."

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  - ii. Second Annual Report of the General Board of Commissioners in Lunacy for Scotland. Blue Book. Presented to both Houses of Parliament, by Command of Her Majesty.
  - iii. XXIII. and XXIV. Vict., c. LXXV. An Act to make better Provision for the Custody and Care of Criminal Lunatics (England and Wales). 6th August, 1860.
  - iv. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D., D. C. L. New Series, Quarterly. Nos. 17, 18, and 19, for January, April, and July. 1860.
  - v. The Journal of Mental Science, published by Authority of the Association of Medical Officers of Asylums and Hospitals for the Insane. Edited by John Charles Bucknill, M. D., London. Quarterly Numbers, 32, 33, 34, 35, for January, April, July, and October, 1860.



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- vi. Proposal to extend the Benefits of Swift's Hospital, in a Letter to the Hon. and Very Rev. R. Pakenham, Dean of St. Patrick's and Christ Church. By John Nugent, M. D., Inspector of Lunatic Asylums.
- vii. The Ninth Annual Report of the Middlesex County Lunatic Asylum at Colney Hatch, for the Year 1859. By D. F. Tyerman and W. G. Marshall, M. R. C. S., Medical Superintendents.
- viii. Twenty-second Annual Report of the Suffolk Lunatic Asylum for the Year 1859. By John Kirkman, M. D., Physician-Superintendent.
- ix. Annual Report of the Royal Edinburgh Asylum for the Insane, for the Year 1859. By David Skae, M. D., Physician-Superintendent.
- x. Forty-sixth Annual Report of the Glasgow Royal Asylum for Lunatics, for the Year 1859. By Alexander Mackintosh, M. D., Physician-Superintendent.
- xi. Sixth Annual Report of the County and City of Worcester Pauper Lunatic Asylum, for the Year 1859. By James Sherlock, M. D., Physician-Superintendent.
- xii. St. Luke's Hospital for Lunatics. Report for the Year 1859. By Henry Stevens, M. D., Physician-Superintendent.
- xiii. Seventh Annual Report of the Omagh District Hospital for the Insane, for the Year ended 31st March, 1860. By Francis John West, M. D., Physician-Superintendent.
- xiv. Annual Report of the Royal Lunatic Asylum of Aberdeen for the Year 1859. By Robert Jameson, M. D., Physician-Superintendent.
- xv. Thirtieth Annual Report of the Belfast District Hospital for the Insane Poor, for the Year ended 31st March, 1860. By Robert Stewart, M. D., Physician-Superintendent.
- xvi. Ninth Annual Report of the Wilts County Asylum, Devizes, for the year 1859. By John Thurnam, M. D., Physician-Superintendent.
- xvii. Religious Revivals in Relation to Nervous and Mental Diseases. By J. S. Bushnan, M. D.
- xviii. Sixteenth Annual Report of the New York State Lunatic Asylum, for the Year ending 30th November, 1858. By John P. Gray, M. D., Physician-Superintendent.
- xix. Reports from the Select Committee on Lunatics, together with the Proceedings of the Committee, Minutes of Evidence, Appendix, and Index. Ordered by the House of Commons to be printed, 5th August, 1859, and 27th July, 1860. Blue Books.

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- II. Beretning om Fødselsstiftelsen i Christiania i Aarene 1855, 1856, og 1857. Ved Dr. F. C. Faye, &c.

Report of the Lying-in Institution in Christiania for the years 1855, 1856, and 1857. By Dr. F. C. Faye.

- III. Förslag till Lag angående sundhetsförhållandenas ordnande i riket, i underdånighet afgifvet den 17 Juni, 1859, af den för ändamålet i nåder förordnade komité. Kritiskt Referat af Dr. C. G. Grähs.

The Project of Law, relating to the Management of Sanitary Matters in the Kingdom, respectfully submitted, on the 17th of June, 1859, by the Committee appointed for the purpose, critically reviewed. By Dr. C. G. Grähs. Reprint from the Hygiea.

10. Advice to a Mother on the Management of her Offspring. By Pye Henry Chavasse, F.R.C.S. Fifth Edition, . . . . . 473
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1. *Electro-Physiology and Electro-Therapeutics; showing the best Methods for the Medical Uses of Electricity.* By Alfred C. Garratt, M.D., Fellow of the Massachusetts Medical Society. Boston: Ticknor and Fields, 1860. Royal 8vo. pp. 708.
2. *The Ninth Annual Report of the Committee of Visitors of the County Lunatic Asylum at Colney Hatch, January Quarter Sessions, 1860.* London: Norris, 1860. 12mo. pp. 159.
3. *Annual Report of the Royal Edinburgh Asylum for the Insane. For the Year 1859.* Pamphlet, pp. 44.
4. *Medical Report of the Royal Lunatic Asylum of Aberdeen, for the Year ending 31st December, 1859.* Aberdeen: G. Cornwall and Sons, 1860. Pamphlet, pp. 29.
5. *Forslag till Lag angående sundhets förhållandenas ordnande i riket i under nighet afgivet den 17 Juni, 1859, af den för ändamålet i nåder förordnade komité.* Stockholm, 1859. *Kritisk Referat af Dr. C. G. Grähs.* Reprinted from the *Hygeia*. Pamphlet, pp. 39.
6. *Seventh Annual Report of the Omagh District Lunatic Asylum for the Counties of Tyrone and Fermanagh, for the Year ending 31st March, 1860. By the Resident Physician.* Pamphlet, pp. 36.
7. *New Lights on Dark Deeds, being Gatherings from the Diary of Richard Rouse, late Warden of the Lunatic Asylum of Kingston.* Edited by his Son. Kingston, Jamaica: Gall and Myers, 1860. Pamphlet, pp. 37.
8. *Della Odierna Diminuzione della Podagra e delle sue Cause, Saggio di Patologia Storica del Dottor Alfonso Corradi di Bologna, Professore di Patologia Generale, Nella R. Università di Modena.* Bologna: Gamberini e Parmeggiani, 1860. 4to. pp. 54.
9. *Third Annual Report of the Board of Superintendence of Dublin Hospitals. With Appendices. Presented to both Houses of Parliament by Command of Her Majesty.* Dublin: Thom and Sons, 1860. Pamphlet, pp. 34.
10. *The Surgical Diseases of Children.* By J. Cooper Forster. London: Parker and Son, 1860. 8vo. pp. 348.
11. *Cellular Pathology, as based upon Physiological and Pathological Histology. Twenty Lectures, delivered in the Pathological Institute of Berlin, during the Months of February, March, and April, 1858.* By Rudolf Virchow. Translated from the Second Edition of the original, by Frank Chance, B. A., M. B., &c. London: Churchill, 1860. 8vo. pp. 511.
12. *The Facts and Fallacies of the Turkish Bath Question; or, What kind of Bath shall we have?* By Edward Haughton, M.D., &c. Dublin: Robertson, 1860. Pamphlet, pp. 56.
13. *Palatine Fissure: its Remedy by Artificial Means considered.* By C. W. Stearns, M.D. New York: Jenkins, 1860. Pamphlet, pp. 23.

14. On Organic Polarity: showing a Connexion to exist between Organic Forces and ordinary Polar Forces. By F. H. Baxter, M.R. C. S. E. London: Churchill, 1860. Post 8vo. pp. 187.

15. The Edinburgh Veterinary Review, and Annals of Comparative Pathology. No. 8. October, 1860. Edinburgh: Sutherland and Knox.

16. The Climate of Worthing: its Remedial Influence in Disease, especially of the Lungs. By W. G. Barker, M. B., &c. London: Churchill, 1860. Post 8vo. pp. 72 and xiv.

17. The British Journal of Homœopathy. No. 74. October, 1860 London: Groombridge and Sons.

18. A System of Instruction in Quantitative Chemical Analysis. By Dr. C. Remigius Fresenius, Professor of Chemistry and Natural Philosophy, Wiesbaden. Third Edition. Edited by J. Lloyd Bullock, F. C. S. London: Churchill, 1860. 8vo. pp. 687.

19. Thirty-third Annual Report of the Directors of James Murray's Royal Asylum for Lunatics, near Perth. June, 1860. 8vo. pp. 104.

20. The Elements of Natural Philosophy; or, an Introduction to the Study of the Physical Sciences. By Golding Bird, M. D., &c., and Charles Brooke, M. B., &c. Fifth Edition. London: Churchill, 1860. Fcap. 8vo. pp. 699.

21. On the Reparative Process in Human Tendons after Subcutaneous Division for the Cure of Deformities; with an Account of the Appearances presented in fifteen post-mortem Examinations in the Human Subject. Also, a Series of Experiments on Rabbits, and a Resume of the English and Foreign Literature on the Subject. By W. Adams, F. R. C. S., &c. London: Churchill, 1860. 8vo. pp. 175, with Lithographs and Woodcuts.

22. Bidrag til det obstetriciske Pathologie. Ved Dr. F. C. Faye, Professor i Accouchement ved Norges Universitet, overlæge ved Fødselsstiftelsen og Børnehospitalet i Christiania. (Aftrykt fra Norsk Magazin for Lægevidenskaben, XLIII. Bd.) Christiania: Carl C. Werner og Comp. 1859. 8vo. pp. 48.

23. Beretning om Fødselsstiftelsen i Christiania i Aarene 1855, 1856, og 1857. Ved Dr. F. C. Faye, &c. 8vo. pp. 98.

24. Academisch Proefschrift over Ulcus Noma. Door Adriaan Jacob van Zadelhoff. Utrecht: P. W. van de Weijer, 1860. 8vo. pp. 56. With two lithographed Plates.

25. Mikroskopische Onderzoekingen over de Ontaarding van Aderen en Zenuwen in Kanker. Door F. R. Westhoff. Utrecht: P. W. van de Weijer, 1860. 8vo. pp. 68. With a Plate.

26. Het Leven en het Maaksel der Dieren. Door W. Vrolik, Hoogleeraar te Amsterdam, Secretaris der Koninklijke Akademie van Wetenschappen. Amsterdam: Gebroeders Binger, 1860. 3 volumes, 8vo. pp. 1342.

27. Further Observations in several Parts of Surgery. By Benjamin Travers, F. R. C. S. E., &c. London: Longmans, 1860. 8vo. pp. 205.

PERIODICALS WITH WHICH THE DUBLIN QUARTERLY  
JOURNAL IS EXCHANGED.

GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. Published Quarterly. London: Churchill. (Received regularly.)
2. The Edinburgh Medical Journal. Published Monthly. Edinburgh: Sutherland and Knox. (Received irregularly.)
3. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Received regularly.)
4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. London: Churchill. (Received regularly.)
5. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)
6. The Lancet. A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News. Edited by Thomas Wakley, Surgeon. Published Weekly. London. (Received regularly.)
7. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)
8. Association Medical Journal. Edited by A. Wynter, M. D. Published Weekly. London: Honeyman. (Received regularly.)
9. The Medical Circular. Published Weekly. London: Harris. (Received regularly.)
10. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received regularly.)
11. The Asylum Journal of Mental Science. Edited by J. C. Bucknill, M. D. London: Longmans. (Received regularly.)
12. The Glasgow Medical Journal. Published Quarterly. Griffin and Co. (Received regularly.)
13. The Athenæum—Journal of English and Foreign Literature, Science, &c. Published Weekly. London. (Received regularly.)
14. The Dublin Medical Press. Published Weekly. (Received regularly.)
15. The Dublin Hospital Gazette. Published twice a Month. (Received regularly.)

16. The Natural History Review : including the Transactions of the Irish Natural History Societies, and of the Geological Society of Dublin. Published Quarterly. Dublin: George Herbert. (Received regularly.)

## INDIA.

17. The Indian Annals of Medical Science ; or, Half-Yearly Journal of Practical Medicine and Surgery. Calcutta: Lepage and Co. (Received regularly.)

18. Transactions of the Medical and Physical Society of Bombay. Printed at the Bombay Education Society's Press. (Received regularly.)

## AUSTRALIA.

19. The Australian Medical Journal. Melbourne: Buzzard. Published Quarterly. (Received regularly.)

## AMERICA.

20. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Published Quarterly. Philadelphia: Blanchard and Lea. (Received regularly.)

21. The North American Medico-Chirurgical Review. A Bi-monthly Journal. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. Philadelphia: Lippincott and Co. (Received regularly.)

22. The New York Journal of Medicine. Edited by Stephen Smith, M. D. Published Monthly. New York. (Received regularly.)

23. The American Journal of Science and Arts ; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. Published Bi-monthly. New Haven. (Received regularly.)

24. The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica, Quarterly. (Received very irregularly.)

25. The American Journal of Dental Science. Edited by C. A. Harris, M. D., and A. S. Piggot, M. D. Published Quarterly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

26. Charleston Medical Journal and Review. Published Monthly. Charleston, U. S. (Received regularly.)

27. The Boston Medical and Surgical Journal. Edited by F. E. Oliver, M. D., and Calvin Ellis, M. D. Published Weekly. (Received regularly, but always subject to Postage.)

28. Peninsular and Independent Medical Journal, Detroit, Michigan. Edited by A. B. Palmer, M. D., Moses Gunn, M. D., and Mr. Stearnes, Pharmaceutist. (As we have not received this Journal, we shall remove it from our Exchange List.)

## FRANCE.

29. Gazette Médicale de Paris. Published Weekly. Paris. (Received regularly.)



30. *Gazette Hebdomadaire de Médecine et de Chirurgie.* Published Weekly. Paris: Victor Masson. (Received regularly.)

31. *Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c.* Published Monthly. Paris: Labé. (Received regularly.)

32. *Journal de Pharmacie et de Chimie, &c.* Published Monthly. Paris: Victor Masson. (Received regularly.)

33. *L'Union Médicale, Journal des intérêts scientifiques et pratiques, moraux et professionnels du Corps médical.* Published three times a Week. Paris. (Received regularly.)

34. *La Lancette Française, Gazette des Hôpitaux civils et militaires.* Published three times a Week. Paris. (Received regularly.)

35. *Le Moniteur des Sciences Médicales et Pharmaceutiques.* Rédacteur en chef, M. H. de Castelnau. Paris. Published three times a Week. (Received regularly.)

36. *Revue Médicale Française et étrangère, Journal des Progrès de la Médecine Hippocratique.* Published twice a Month. Publié par le Docteur ales-Girons. Paris. (Received regularly.)

37. *Archives Générales de Médecine; Journal Complémentaire des Sciences Médicales.* Published Monthly. Paris: Labé. (Received regularly.)

38. *Bulletin de l'Académie de Médecine.* Published Monthly. Paris: Baillière. (Received regularly.)

39. *Mémoires de l'Académie de Médecine.* (Received regularly.)

40. *Revue de Thérapeutique Médico-Chirurgicale.* Published twice a Month. Paris: Dr. A. Martin-Lauzer. (Received regularly.)

41. *Journal de Médecine et de Chirurgie Pratiques à l'Usage des Médecins.* Published Monthly. Par Lucas-Championnière. Paris. (Received regularly.)

42. *Journal des Connaissances Médicales pratiques et de Pharmacologie.* Published every ten days. Paris. (Received regularly.)

43. *Annales Médico-Psychologiques.* Par MM. Baillarger, Cerise, et Moreau. Published Quarterly. Paris: Victor Masson. (Received regularly.)

44. *Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Recueil pratique.* Par le Docteur Debout. Published twice a Month. Paris. (Received regularly.)

45. *Repertoire de Pharmacie. Recueil pratique.* Par M. le Dr. Bouchardat. Published Monthly. (Received regularly.)

46. *Gazette Médicale de Strassbourg.* Published Monthly. (Received regularly.)

47. *Journal de Médecine de Bordeaux.* Rédacteur en chef, M. Costes. Published Monthly. (Received regularly.)

48. L'Union Médicale de la Gironde. Bordeaux. Published Monthly. (Received regularly.)

49. Annales D'Hygiène Publique et de Médecine Légale. Paris. Published Quarterly. (Received regularly.)

50. Gazette Médicale de Lyon. Dirigée par le Dr. P. Diday. Published Bi-Monthly. (Received regularly.)

51. Journal de la Physiologie de l'Homme et des Animaux. Publié sous la Direction du Docteur E. Brown-Séquard. Paris: Masson. Published Quarterly. (Received regularly.)

## BELGIUM.

52. Annales D'Oculistique. Fondées par le Docteur Florent Cunier. Published Monthly. Brussels. (Received regularly.)

53. Annales et Bulletin de la Société de Médecine de Gand. Published Monthly. (Received regularly.)

## GERMANY.

54. Zeitschrift für rationelle Medicin; herausgegeben Von Dr. J. Henle und Dr. C. v. Pfeufer. Published Monthly. Heidelberg and Leipzig: C. F. Winter. (Received regularly.)

55. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Published Quarterly. Prague: Karn André. (Received regularly.)

56. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern. Redigirt von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Würzburg: Stahel. (Received regularly.)

57. Journal für Kinderkrankheiten. Herausgegeben von Dr. Fr. J. Behrend und Dr. A. Hildebrand. Published Monthly. Erlangen: Palm and Enke. (Received irregularly.)

58. Aerztliches Intelligenz-Blatt. Organ für Bayerns Staatliche und öffentliche Heilkunde. Munich: C. Kaiser. (Not received since No. 17, 1859.)

## PRUSSIA.

59. Archiv für pathologische Anatomie und Physiologie, &c., Herausgegeben von R. Virchow. Berlin: G. Reimer. Published Monthly. (Received regularly.)

60. Archiv für Klinische Chirurgie. Herausgegeben von Dr. B. Langenbeck. Redigirt von Dr. Billroth, Prof. der Chirurgie, und Dr. Gurlt, Docent der Chirurgie in Berlin. Berlin: August Hirschwald.

## HOLLAND.

61. Archiv für die Holländischen Beiträge zur Natur- und Heilkunde. Herausgegeben von F. C. Donders, Utrecht, und W. Berlin, Amsterdam. Utrecht: Kemink and Zoon. (Received regularly.)

## NORWAY.

62. Norsk Magazin, for Lægevidenskaben, udgivet af det medicinsk. Selskab i Christiania. Redigeret af W. Boeck. Faye. A. W. Münster. Lund: Voss. Published Monthly. Christiania: Feilberg & Landmark. (Received regularly.)

## SWEDEN.

63. Hygiea, Medicinsk och Pharmaceutisk Månads-Skrift. Published Monthly. Stockholm. (Received regularly.)

## DENMARK.

64. Bibliothek for Læger. Udgivet af Direktionen for det Classenske Litteraturselskab. Redigeret af Dr. E. Dahlerup. Copenhagen: Reitzels. (Received regularly.)

## ITALY.

65. Bulletino delle Scienze Mediche. Pubblicato per cura della Società Medico-Chirurgica di Bologna. Published Monthly. (Received regularly.)

66. Giornale Veneto di Scienze Mediche. Published Monthly. (Received regularly.)

67. Lo Sperimentale ovvero Giornale Critico di Medicina e Chirurgia per servire al Bisogni dell'Arte Salutare. Direttore Prof. C. C. M. Bufalini. Published Monthly. Florence. (Received regularly.)

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AUGUST 1, 1860.

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PART I.  
ORIGINAL COMMUNICATIONS.

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ART. I.—*On the Natural Constants of the Urine of Man.* By  
the REV. SAMUEL HAUGHTON, F. R. S., Fellow of Trinity  
College, Dublin.

(Continued from vol. xxviii. p. 17.)

PART IV.—*Comparison of the foregoing with the daily work,  
bodily and mental, and with the daily food of Man.*

BEFORE deducing any inferences from the excretion of urea, uric acid, and phosphoric acid, established in the three preceding parts of this paper, a preliminary inquiry suggests itself, which, if decided in the negative, would go far to render any inferences deduced from the urine of but secondary value.

I take for granted that the substances excreted by the urine of a healthy man result from the wear and tear of tissue of every kind in the body; and that, in a state of health, this excretion is exactly compensated for by the assimilation of an equal amount of the same substances ingested.

This hypothesis would be readily granted, if it included all the *excreta*—per cutem, per halitum, per anum, per vesicam, provided the *ingesta* also included all received by the stomach, lungs (and skin?)—but, in restricting my hypothesis to the



urine, I was aware that I differed from many physiologists, and that the *onus probandi* rested upon me. I, accordingly, undertook a number of observations on the food taken by the persons experimented on in the preceding part of this paper, particularly with reference to the nitrogen received in their food compared with the nitrogen excreted by the urine. The results of these observations I shall now detail, previously to deducing any inferences from the excretions of the urine. I determined the water lost by drying each article of food at 212° F., and afterwards analyzed the dried product for nitrogen, by burning in a tube with soda lime, and collecting the ammonia in muriatic acid. The quantity of nitrogen was found by adding bichloride of platinum, and afterwards weighing the double chloride of platinum and ammonium on a weighed filter; or by the weight of platinum after ignition; or by both methods. I always found, when the ignition of the double chloride was conducted slowly, that the results were identical with those given by the direct weighing of the ammoniaco-platino-chloride.

#### *Experiments on Food.*

1. *Lean roasted Mutton*; leg; 5 days dead before cooking, 2 days cooked—

114 grs., dried at 212° F., gave 48·10 grs.

Solids = 48·19 per cent.

2. *Lean roasted Mutton*; leg, nearer the shank end; more fat and fascia than in No. 1; 5 days killed, 1 day cooked—

89 grs., dried at 212°, gave 28·10 grs.

18·10 grs. of the latter, burned with soda lime, gave of platinum 12·70 grs.

Solids = 31·57 per cent.

Nitrogen = 10·02 „

3. *Lean roasted Mutton*; leg, nearer the loin; very little fat or fascia; 5 days killed, 1 day cooked.

123·75 grs., dried at 212° F., gave 62·80 grs.

13·30 grs. of the latter, burned in tube, gave of platinum 11·70 grs.

Solids = 50·75 per cent.

Nitrogen = 12·56 „

4. *Lean raw Mutton*; loin; 5 days killed.

118·75 grs., dried at 212° F., gave 38·90 grs.

14·65 grs. of the latter gave of platinum 11·53 grs.

Solids = 32·76 per cent.

Nitrogen = 11·21 „

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his wife at once applied to the parochial authorities to have him removed to the asylum. Up till that time he had continued at his work, but since Monday he had remained at home. On Friday evening Mrs. M'Bready had occasion to leave her dwelling to go a message, and she left her husband in the house with their only child, a little girl named Isabella, about three years of age. Immediately after she had gone M'Bready at once locked the door of the house and supplied himself with a razor. He then picked up his little daughter, and with that instrument deliberately cut her throat to such an extent that the head was completely severed from the body. M'Bready then became very much excited, and rushed to the window of the room. This he opened, and threw himself out from a height of four storeys. He received such severe injuries that it is not expected he will recover.

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ULTRA-RITUALISM IN NEW YORK.—Americans are apt to carry what they take up into even greater extravagances than their British cousins. There are lower Low Churchmen and no higher High Churchmen than in the United States. From a revival to a Christ Church ceremonial in the Episcopal Church of Fifth-avenue, New York, the distance is wider than anything in the line of theology that obtains in England. The Rev. Dr. Ewer is the rector, and on the 3rd inst. his church was the scene of a ceremony which astonished the citizens, having for its object the formal adoration of the cross. The building was darkened, while the chancel blazed with light. A colossal brazen cross was erected on the altar, before which knelt the priests and acolytes. Various processions moved around the church, with boys in surplices, bearing wax-burners and crosses in front. The fellows of "the Guild of the Holy Cross," in whose behalf the service was per-

110 $\frac{1}{2}$ ,  $\frac{3}{4}$ .

In the foreign stock market the dealings have been moderately active, and in a few instances prices have shown greater firmness, in sympathy with the English funds. Italian Five per Cent improved  $\frac{1}{8}$  to 56 $\frac{3}{8}$ ,  $\frac{3}{4}$ ; Turkish Six per Cent, 1858,  $\frac{1}{2}$ , to 63 $\frac{1}{2}$ , 64 $\frac{1}{2}$ ; and the Five per Cent  $\frac{1}{2}$ , to 43 $\frac{1}{2}$ , 43 $\frac{1}{4}$ ; while Brazilian Five per Cent, 1865, declined  $\frac{1}{2}$ , to 80 $\frac{1}{2}$ ; Egyptian Seven per Cent, 1868,  $\frac{1}{4}$ , to 75 $\frac{1}{4}$ ,  $\frac{3}{4}$ ; Peruvian Five per Cent  $\frac{1}{4}$ , to 77 $\frac{1}{4}$ ; Spanish New Three per Cent  $\frac{1}{4}$ , 28 $\frac{3}{8}$ ,  $\frac{7}{8}$ ; Argentine Bonds were dealt in at 78 $\frac{3}{8}$ ,  $\frac{3}{4}$ ; Honduras Government Railway Loan, at 84; Mexican Stock, at 12 $\frac{7}{8}$ ; Russian Five per Cent, 1862, at 84 $\frac{5}{8}$ ,  $\frac{3}{4}$ ; and New Granada Bonds, at 18. The following are the closing quotations:—Brazilian Five per Cent, 1865, 80,  $\frac{1}{2}$ ; Chilian Six per Cent, 1867, 96, 7; Egyptian Seven per Cent, 1864, 85, 6; ditto Seven per Cent, 1868, 75 $\frac{3}{4}$ , 6; Italian Five per Cent, 1861, 56 $\frac{5}{8}$ ,  $\frac{3}{4}$ ; ditto Six per Cent, 1868, 85, 7; Mexican Three per Cent, 12 $\frac{1}{2}$ , 13; Peru Five per Cent, 1865, 77 $\frac{3}{4}$ ,  $\frac{5}{8}$ ; Russian Five per Cent, 1866, 88 $\frac{1}{2}$ , 91 $\frac{1}{2}$ ; ditto Four per Cent (Nicolas Railway), 63 $\frac{1}{2}$ , 4; ditto Five per Cent (Orel Vitebsk Railway), 78, 9; ditto Five per Cent (Moscow Jaroslaw Railway), 79 $\frac{1}{2}$ , 80 $\frac{1}{2}$ ; Spanish Three per Cent, 1867, 28 $\frac{1}{2}$ ,  $\frac{5}{8}$ ; Turkish Six per Cent, 1858, 63 $\frac{1}{2}$ , 4 $\frac{1}{2}$ ; ditto Six per

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11. *Boiled Cauliflower*; 1 day cooked.

203·18 grs., dried at 212° F., gave 22·25 grs.

20·33 grs. of the latter gave of am. plat. chloride 11·40 grs.

Solids = 10·95 per cent.

Nitrogen = 3·50 „

12. *Prison Milk*. Dr. Apjohn favoured me with the results of his own experiments, made by direct analysis on two specimens of the milk supplied usually to the Dublin market, and on a specimen procured direct from the cow. From these carefully conducted experiments it would appear that, if the adulteration of milk be merely water, the specific gravity affords a direct measure of the nitrogen present. The nitrogen was determined by him in the same manner as by myself, viz., by the corresponding weight of platinum procured.

No. 1, Sp. gr. 1025; Platinum per 1000 grs. 21·80 grs.

No. 2, „ 1027; „ 23·62 „

No. 3 (pure) „ 1035; „ 32·48 „

The prison milk examined by me had a specific gravity of 1024·9, and also contained 177 grs. (equivalent to glucose) of sugar per pint.

Collecting together the preceding data, the following Tables may be constructed, showing respectively the quantity of water and of nitrogen in the several articles of food experimented upon.

TABLE J.—*Quantity of Water and Solid Matter in Articles of Food.*

No.	Food.	Solids per cent.	Water per cent.
1.	Mutton (roast), . .	42·19	57·81
„	„ „	31·57	68·43
„	„ „	50·75	49·25
2.	Mutton (raw), . . .	32·76	67·24
3.	Beef (roast), . . .	38·16	61·84
4.	Beef (raw), . . . .	30·77	69·23
5.	Bread (1st quality), .	61·51	38·49
6.	Bread (2nd quality) .	61·34	38·66
7.	Oatmeal, . . . .	92·03	7·97
8.	Indian Meal, . . .	85·20	14·80
9.	Cauliflower, . . .	10·95	89·05

The following remarks may be made on this Table:—

The per-centage of water in roast mutton varies much more than it does in roast beef, probably on account of the more va-

riable proportion of fat distributed in the cellular matter between the muscular fibres.

The average of the three specimens of roast mutton [solids, 41·50 per cent.; water, 58·50] comes very near that found for roast beef.

The close agreement between the two specimens of bread is what might be expected from the facts recorded by chemists respecting the "water of panification."

TABLE K.—*Per-centage of Nitrogen found in Articles of Food, previously dried at 212° F. (except the milk).*

No.	Food.	Nitrogen per cent.	No.	Food.	Nitrogen per cent.
1.	Mutton (roast), .	10·02	7.	Bread (2nd quality),	2·21
2.	" "	12·56	8.	Oatmeal, . . .	3·04
3.	Mutton (raw), . .	11·21	9.	Indian Meal, . .	1·56
4.	Beef (roast), . .	12·64	10.	Cauliflower, . .	3·50
5.	Beef (raw), . . .	12·80	11.	Milk (sp. gr. 1035),	4·64
6.	Bread (1st quality),	2·12	12.	Milk (sp. gr. 1025),	3·11

per 1000 gr.

The specimens of mutton (Nos. 1, 2) gave of solids 31·57 and 50·75 per cent., respectively; from which, and other similar facts, I infer that the mutton that contains least water and fat is not only the best for that reason, but that also its muscular fibre contains more nitrogen when dried. The poor fatty mutton, 2 or 2½ years old, with pale muscle, that abounds in the Dublin markets, is the result of our so-called improved breeding of sheep, possessed of high fattening qualities, but is very inferior to the dark-fibred 3 or 3½ year old mutton, now, alas! almost extinct; this inferiority depends on a double cause, the excess of water, and the deficiency of nitrogen. The difference in the nitrogen contained in the two qualities of bread, though slight, is, I believe, real, as it is probable that there is a greater quantity of gluten in our red than in our white wheats.

It is now necessary, by the aid of the preceding Tables, to calculate the quantity of nitrogen, or of its equivalent urea, taken as food by the subjects of Tables A and B; I am able to do so in the case of No. 1 of Table A, and of Nos. 2, 3, 4, 5, of Table B. The food used daily by No. 1, Table A, during some time preceding, and during the experiments, was as follows:—

- I. Roast beef (cold), . . . 8 oz.  
 II. White bread, . . . 8 oz.  
 III. Boiled cauliflowers, . . 10 oz.  
 IV. Milk (sp. gr. 1025), . . 1 pint.

By the aid of the chain rule, which is admirably adapted to such calculations, I find the equivalent of these four articles of diet in grains of urea, as follows:—

- I. 
$$\begin{array}{r} 8 \text{ oz. cold roast beef.} \\ 16 \swarrow \\ 10000 \swarrow 7000 \text{ grs. " " } \\ 10000 \swarrow 3816 \text{ grs. dried at } 212^{\circ}. \\ 10000 \swarrow 1264 \text{ grs. nitrogen.} \\ 28 \swarrow 60 \text{ grs. urea.} \\ \hline 362 \text{ grs.} \end{array}$$
- II. 
$$\begin{array}{r} 8 \text{ oz. white bread.} \\ 16 \swarrow \\ 10000 \swarrow 7000 \text{ grs. " " } \\ 10000 \swarrow 6151 \text{ grs. dried at } 212^{\circ}. \\ 10000 \swarrow 212 \text{ grs. nitrogen.} \\ 28 \swarrow 60 \text{ grs. urea.} \\ \hline 98 \text{ grs.} \end{array}$$
- III. 
$$\begin{array}{r} 10 \text{ oz. boiled cauliflower.} \\ 16 \swarrow \\ 10000 \swarrow 7000 \text{ grs. " " } \\ 10000 \swarrow 1095 \text{ grs. at } 212^{\circ} \text{ F.} \\ 1000 \swarrow 35 \text{ grs. nitrogen.} \\ 28 \swarrow 60 \text{ grs. urea.} \\ \hline 36 \text{ grs.} \end{array}$$
- IV. 
$$\begin{array}{r} 1 \text{ pint milk.} \\ 8 \swarrow \\ 10000 \swarrow 70000 \text{ grs.} \\ 10000 \swarrow 218 \text{ grs. platinum.} \\ 98 \swarrow 14 \text{ grs. nitrogen.} \\ 28 \swarrow 60 \text{ grs. urea.} \\ \hline 58 \text{ grs.} \end{array}$$

Adding together the preceding results, we find—

- |                                  |               |                |
|----------------------------------|---------------|----------------|
| I. Cold roast beef, 8 oz.,       | equivalent to | 362 grs. urea. |
| II. White bread, 8 oz.,          | "             | 98 " "         |
| III. Boiled cauliflower, 10 oz., | "             | 36 " "         |
| IV. One pint of milk,            | "             | 58 " "         |
|                                  |               | <hr/>          |

Total equivalent of urea ingested, **554 grs.**

Let us now compare this quantity of urea with that excreted *per vesicam* and *per anum*.

The *faeces* passed per day amounted to 5 oz., the analysis of which gave the following results:—

305.45 grs., dried at  $212^{\circ}$  F., gave 80.05 grs.

28.15 grs. of the latter gave of am. plat. chloride, 30.75 grs.

From these data I find—

Solids = 26.21 per cent.  
 Nitrogen = 6.86 " "

From this we obtain the total urea equivalent to the nitrogen thus excreted.

$$\begin{array}{rcl}
 & \swarrow & 5 \text{ oz. } \text{fæces.} \\
 16 & \swarrow & 7000 \text{ grs.} \\
 10000 & \swarrow & 2621 \text{ grs. at } 212^{\circ} \text{ F.} \\
 10000 & \swarrow & 686 \text{ grs. nitrogen.} \\
 28 & \swarrow & 60 \text{ grs. urea.} \\
 \hline
 & & 84\cdot28 \text{ grs.}
 \end{array}$$

Combining this result with that given in Table A, we find—

1. Urea, excreted *per vesicam* = 465·09 grs.
2. Equivalent of urea, excreted *per anum*, . . . = 84·28 grs.

Total, . . . . . **549·37**

The close agreement of this result with that obtained from an analysis of the food entitles me to assume that the nitrogen used in the body is naturally excreted by the kidneys, and that the surplus taken in food, and not used or required by the body is thrown out as a mere excretion *per anum*.

I am aware that this result differs widely from the statements made in Carpenter's Physiology, and other books, on the authority of Barral and other experimenters, who divide the nitrogen excreted from the body into two nearly equal portions, one of which is discharged *per vesicam et anum*, and the other *per cutem et halitum*.

M. Barral's results are as follow:—

Subject.	Nitrogen in food.	Nitrogen excreted.		
		Per vesicam.	Per anum.	Per cutem et halitum.
M. Barral, æt. 29, in summer wt. 105 lbs. }	432·3 grs.	168·3 grs.	42·2 grs.	220·8 grs.
M. Barral, in winter,	327·3 „	151·3 „	20·1 „	155·9 „
Boy (æt. 6, wt. 33 lbs.)	121·9 „	47·8 „	27·8 „	46·3 „
Man (æt. 59, weight, 129 lbs., . . . . }	421·5 „	234·6 „	38·6 „	148·3 „
Unmarried Woman, æt. 32, wt. 135 lbs., }	345·8 „	154·4 „	12·3 „	179·1 „

I believe that the results of this Table are in error, both by underrating the nitrogen passed in the urine, a mistake commonly committed in estimating urea, and also by overrating

the nitrogen taken in food, as I certainly find some difficulty in understanding how M. Barral, only weighing 105 lbs., could possibly consume the equivalent of 926 grs. of urea per day. If any doubt rest on the actual facts as to the nitrogen in the food and urine, of course the result as to the skin and lungs becomes worthless, as it is found simply by difference. I now turn to the case of Nos. 2, 3, 4, 5, of Table B, for which I have accurate analyses of the food and urine, but not of the fæces.

These subjects of experiment, being prisoners in the Military Prison in Dublin, of course could have no access to any food except that allowed by the regulations. I am indebted to my friend, Mr. Tufnell, to whom I take this opportunity of acknowledging my obligations, for the facilities which I experienced in making my observations on this class of subjects.

The food allowed by the prison regulations is the following:—

- I. Oatmeal, . . . . 8 oz.
- II. Indian Meal, . . . 9 oz.
- III. Bread, . . . . 8 oz.
- IV. Milk, . . . . 1½ pints.

The preceding quantities of food, converted, as before, into their equivalents of urea, give the following results:—

- I.
- |       |                      |
|-------|----------------------|
|       | 8 oz. oatmeal.       |
| 16    | 7000 grs. „          |
| 10000 | 9203 grs. at 212° F. |
| 10000 | 304 grs. nitrogen.   |
| 28    | 60 grs. urea.        |
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|       | 210·5 grs.           |
- II.
- |       |                     |
|-------|---------------------|
|       | 9 oz. Indian meal.  |
| 16    | 7000 grs. „         |
| 1000  | 852 grs. at 212° F. |
| 10000 | 156 grs. nitrogen.  |
| 28    | 60 grs. urea.       |
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|       | 112 grs.            |
- III.
- |       |                      |
|-------|----------------------|
|       | 8 oz. prison bread.  |
| 16    | 7000 grs. „          |
| 10000 | 6134 grs. at 212° F. |
| 10000 | 221 grs. nitrogen.   |
| 28    | 60 grs. urea.        |
| <hr/> |                      |
|       | 101·6 grs.           |

The milk used in the prison had a specific gravity of 1024·9, and contained 177 grs. of sugar equivalent to glucose per pint. I therefore adopt for it the same result as that before used, viz., one pint equivalent to 58 grs. of urea.



Combining the preceding results, I find the total food used per day to be equivalent to the following quantity of urea:—

I. Oatmeal, 8 oz., . . .	210·5 grs. urea.
II. Indian meal, 9 oz., . . .	112·0 „ „
III. Bread, 8 oz., . . .	101·6 „ „
IV. Milk, 1½ pints, . . .	87·0 „ „

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Total, . . . . 511·1 grs. urea.

From Table B, it appears that the excreta, estimated as urea, were as follows:—

I. Excreta <i>per vesicam</i> , . . .	400·62 grs. urea.
II. Excreta <i>aliter</i> , . . . .	110·48 „ „

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Total, . . . . 511·10

I have no doubt but that the 110 grs., equivalent to 51·6 grs. of nitrogen, were discharged as surplus *per anum*, and that the lungs and skin had nothing to do with their elimination.

Having re-established the fact, that the kidneys are the sole excreting organ intended to be used in health for the elimination of nitrogen from the body, and that the nitrogen so excreted has done its work, it remains for me to show the connexion between the work done and the nitrogen so excreted.

I have already divided the work done into four different heads:—

- a. Opus vitale.
- b. Opus calorificum.
- c. Opus mechanicum.
- d. Opus mentale.

Of these, the first two, properly speaking, ought to be considered together, as they are both necessary to the life and health of the individual; but as the second is fully accounted for by the excretion of carbonic acid from the lungs, and in no way relates to the present subject, I shall omit its consideration for the present, and confine myself to the three other descriptions of work. Before doing so, it is necessary to estimate, in the usual manner, the amount of mechanical work done, and then to determine the number of grains of urea to which it is equivalent.

Let us turn first to Table B.

The habits of the subjects of experiment are as follows:—

No. 1, wt. 173 lbs., walks 3 miles per day.

No. 2, 3, 4, 5. Average weight 141 lbs.

1. Shot drill, . . . . 3 hours.
2. Ordinary drill, . . . 1¼ hours.
3. Oakum-picking, . . . 3½ hours.

1. To estimate the work done by a person of a given weight walking, it is only necessary to remember that the effort of walking is equivalent to that of lifting one-twentieth part of the weight of the body through the distance walked; this fact I have established by many observations. We therefore obtain the following formula—

$$\left. \begin{array}{l} \text{Work done in walking estimated in tons} \\ \text{lifted through a foot,} \end{array} \right\} = \frac{5280 \times w \times n}{20 \times 2240} \quad (4)$$

$w$  and  $n$  denoting the weight in lbs., and the distance walked in miles.

2. The work done in shot drill is somewhat more difficult of estimation. From careful observation of the prisoners engaged in this highly uninteresting occupation, I obtained the following results:—

Each man lifts a 32 lb. shot to his breast (3 ft.) from a tressel, carries it through 9 ft. by measurement (4 paces by drill); and lays it down on a similar support; he then returns unloaded, and takes up another shot, and so repeats the double journey; of course, after a certain time, all the 32 lb. shots are transferred from one side to the other of the working gang, and they must then reverse the order of proceeding, and carry back the shots. Six of these double journeys occupy one minute.

Now, as it can be proved that equal work is done in lifting and laying down the shot, we readily obtain the following expression for the work done in the three hours—

$$\text{Work in tons} = \left( \frac{(2w + 32) a}{20 \times 2240} + \frac{32 + 2h}{2240} \right) \times n \times 180^m, \quad (5)$$

where

$w$  = weight of man in pounds.

$a$  = distance in feet to which the 32 lb. shot is carried.

$h$  = height in feet to which it is lifted.

$n$  = number of double journeys per minute.

Substituting for these their values, we find—

Work of three hours' shot drill in tons lifted through one foot

$$= \left( \frac{(282 \text{ lbs.} + 32 \text{ lbs.}) 9 \text{ ft.}}{20 \times 2240} + \frac{32 \text{ lbs.} \times 6 \text{ ft.}}{2240} \right) \times 6 \times 180 = \mathbf{160.7 \text{ tons.}}$$

3. *Oakum-picking.*—If we estimate the mechanical labour of this occupation as less than half that of walking, it will be safe to consider  $3\frac{1}{2}$  hours of oakum-picking as equivalent to 5 miles' walking; this estimate I adopt for the present.

From the preceding considerations, the following estimate of the work done in actual mechanical labour by the subjects of experiment of Table B is easily deduced.

No. 1. Work done in walking = 61.1 tons lifted through one foot.

This result is obtained from equation (4).

Nos. 2, 3, 4, 5. (I assume common drill to be the same labour as walking.)

Work done:—

1. Shot drill, . . . . .	160.7 tons lifted one foot.
2. Common drill (4 miles),	66.5        „        „
3. Oakum-picking (5 miles),	83.1        „        „

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All the subjects of Table B may be considered as simply expending force in the act of living, and in working or walking about. From these considerations, I find the following equations:—

$$\begin{aligned} 400 &= Aw + B. \\ 367 &= Aw' + B'. \end{aligned} \quad (6)$$

In these equations,

400 grs. of urea represent the total work of the Military Prisoners, Nos. 2, 3, 4, 5.

367 grs. of urea represent the total work of No. 1.

$w, w'$ , are the weights of the subjects respectively, viz., 141 lbs. and 173 lbs., referred to 150 lbs., as the weight of the standard man.

$A$  denotes the daily discharge of urea in grains requisite to keep the standard man (150 lbs.) alive.

$B, B'$ , denote the urea in grains that are equivalent to the mechanical work done by Nos. 2, 3, 4, 5, and No. 1, respectively.

From the estimate of the work already given, we obtain the following additional equation—

$$61 B = 310 B'. \quad (7)$$

Combining equations (6) and (7), we find—

$$\begin{aligned} 400 \times 150 &= A \times 141 + B. \\ 367 \times 150 &= A \times 173 + B'. \\ 61 B &= 310 B'. \end{aligned} \quad (8)$$

Solving for  $A$ ,

$$\begin{aligned} A &= \frac{310 \times 367 - 61 \times 400}{310 \times 173 - 61 \times 141} \times 150 \\ &= 297.7 \text{ grs. urea.} \end{aligned}$$

This is the excretion of urea requisite to keep 150 lbs. wt. of man alive for four and twenty hours.

In round numbers, it may be called 300 grs.; from which it follows that each pound weight of living man requires an expenditure of work, represented by 2 grs. of urea, per day to keep it alive, and prevent it from becoming subject to the ordinary chemical laws of inert matter.

Substituting in equations (8) for  $A$  its value just found, we obtain—

$$400 = 297.7 \times \frac{141}{150} + B,$$

$$367.5 = 297.7 \times \frac{173}{150} + B'.$$

From which it is easy to deduce

$$B = 120 \text{ grs.}$$

$$B' = 24.2 \text{ grs.}$$

These numbers express the grains of urea, equivalent to the mechanical work done by Nos. 2, 3, &c., and No. 1, respectively; but the work done is 61 and 310 tons lifted through one foot, respectively; from which it is easy to calculate  $\beta$ , the number of grains of urea requisite to lift 100 tons through one foot, viz.:—

$$\beta = \frac{120 \times 100}{310} = 38.71 \text{ grs.,}$$

and

$$\beta = \frac{24.2 \times 100}{61} = 38.67 \text{ grs.}$$

Taking the mean of which, I find—

$$\beta = \text{38.69 grs. of urea.}$$

I have already found that it requires 297.7 grs. of urea to keep 150 lbs. of man alive for 24 hours; the actual value of this vital work may now be calculated, by dividing 297.7 by  $\beta$ , the coefficient in urea of mechanical work—

$$\text{Opus vitale} = \frac{297.7 \times 100 \text{ tons}}{38.69} = 769.45 \text{ tons lifted one foot.}$$

This enormous force is requisite to keep 150 lbs. of man living during 24 hours, and yet it is not all that is required; for, in addition, there is the *Opus calorificum*, or work necessary to keep the skin at a constant temperature of 90° F. The amount of this latter work will vary with climate and season, and appears to depend altogether on the excretion of carbonic acid, and not on that of urea.

No chemist who reflects on the number and power of the chemical affinities that are controlled and kept from acting by the vital force during life, will feel disposed to question the enormous energy which my results tend to attribute to it.

Let us examine these results from another point of view. I have estimated the work done by the prisoners at 310 tons lifted one foot. This is a large amount of work, perhaps as large as can ever be obtained in forced labour, but it falls below what is observed in free labour. I take as an example the paviours, Welsh and Irish, employed in this city, on whom I made careful observations last October, and found the following results:—

Weight of rammer, . . . .	5 st. 9 lbs.
Blows of rammer, . . . .	78 in 2 <sup>m</sup> 45 <sup>s</sup> .
Rest, . . . . .	3 <sup>m</sup> 30 <sup>s</sup> .
Height lifted, . . . . .	16 in.
Hours of labour, . . . .	10 hours.

From these data, it is easy to calculate that the work is equivalent to 352 tons lifted one foot per day; to which must be added the work done in walking to and from the work, and while at work; this is equivalent to one-twentieth of the distance walked, multiplied by the weight of the labourer. The whole mechanical work is, in all probability, less than 400 tons lifted one foot per day. According to the observations of Coulomb, Lamandé, and others, French workmen are not usually capable of this amount of labour, although it is sometimes approached. I select the following instances:—

1. Coulomb estimates the work done per day in pile-driving at 75240 kilogram-metres = 242 tons lifted one foot.

2. Lamandé found the work done in pile-driving, at the building of the bridge of Jena, to be

80635 kilogram-metres = 260 tons lifted one foot.

3. Coulomb determined the daily work of men employed turning a lever at 115920 kilogram-metres

= 374 tons lifted one foot.

4. Coulomb found, on questioning a number of pedlars, that they stated that on an average they carried 44 kilos, 19,000 metres per day. Supposing each pedlar to weigh 55 kilos, this would give 1881000 kilogram-metres horizontally. The one-twentieth part of this is the weight lifted

= 94050 kilogram-metres.

= 303 tons lifted one foot.

The low amount of work done in the case of pile-driving



appears to be partly due to the rapid character of the work, and its consequent exhausting effect.

Let us take the work done by the paviours as the average work of well-fed and well-paid labourers, working freely; and, supposing each man to weigh 150 lbs., and calculate how high this work would lift his body in the 24 hours. We find, calling  $x$  this height in miles—

$$\frac{x \times 150 \text{ lbs.}}{2240} = \frac{352 \text{ tons}}{5280 \text{ ft.}};$$

or,

$$x = 1.005 \text{ miles.}$$

This result is confirmed by the consideration that 20 or 21 miles per day, with rest on Sundays, is the utmost that a skilled pedestrian would undertake as a constant performance, carrying no weights except his clothes. Since the coefficient of traction is 1-20th or 1-21th, this would be equivalent to lifting his body through one mile per day.

This mode of considering the result is independent of the weight of the agent, and will be found useful in almost every kind of labour, as the work done is generally proportional to the weight of the labourer; and it is easily remembered that a man could lift his own body through one mile by the utmost daily labour he is capable of. Let us now consider the height to which the work that keeps a man's body alive for 24 hours is capable of lifting that same body. The vital work on 150 lbs. is measured by 297.7 grs. urea, and 38.69 grs. of urea are equal to 100 tons lifted one foot, from which I find the following chain:—

$$\begin{array}{rcl} & & 1 \text{ lb. living man.} \\ 150 & \swarrow & 297.7 \text{ grs. urea.} \\ 38.69 & \swarrow & 100 \text{ ton-feet.} \\ 1 & \swarrow & 2240 \text{ lb. feet.} \\ 5280 & \swarrow & 1 \text{ lb. mile.} \\ & \text{---} & \\ & & 2.18 \text{ miles.} \end{array}$$

Therefore, the vital force that keeps a man of any weight alive for 24 hours, is capable of lifting his body through 2.18 miles in the same time.

I may add, as a confirmation of the estimate of vital work (297.7 grs. urea to 150 lbs.), that I tried some experiments on convalescent hospital patients, who took little or no exercise, and were well fed, and that I found 300 grs. urea to be the daily excretion of men weighing 11 stone, or 154 lbs.

It remains now to determine, if possible, the *Opus mentale*, and to give its coefficient in waste of tissue, or discharge of urea. For this purpose, I constructed the following Table:—

TABLE L.—*Work done, expressed in Urea Grains, and divided into its component parts.*

No.	Total Urea.	Opus vitale.	Opus mechanicum.	Opus mentale, &c. &c.
	grs.	grs.	grs.	grs.
Table B, No. 1, . . .	367·5	343·3	24·2	—
„ Nos. 2, 3, 4, 5,	400·6	279·8	120·8	—
Table A, No. 1, . . .	465·0	250·1	28·7	186·2
„ No. 2, . . .	677·2	250·1	57·4	369·7
„ No. 3, . . .	644·6	250·1	57·4	337·1
„ No. 4, . . .	554·0	345·3	15·8	192·9
„ No. 5, . . .	630·0	375·1	34·5	220·4
„ No. 6, . . .	484·3	287·8	33·0	163·5

In this Table I have calculated the grains of urea corresponding to the vital work from the expression—

$$\text{Opus vitale} = \frac{297.7 \times w}{150}, \quad (9)$$

where  $w$  denotes the weight in pounds.

I have calculated the mechanical work done by the following equation deduced from (5),

$$\text{Opus mechanicum} = \frac{5280 \times w \times n \times 38.69 \text{ grs.}}{20 \times 2240 \times 100}, \quad (10)$$

$n$  denoting the number of miles walked.

On making this calculation, I have assumed the partridge-shooting of No. 2, and athletic games of No. 3, as each equivalent to 10 miles' walking. The column headed *Opus mentale, &c.*, is found by difference, and has now to be discussed.

In the first place, I take Nos. 1, 5, 6, whose mental occupation was almost identical, consisting of high class teaching, and severe study preparatory to it (correcting the statement appended to No. 6, in Table A, as I find on inquiry, that the two hours there mentioned only include the time of preparation, and not the time of teaching, which was also two hours).

If we suppose that mental work, like other work, causes a waste of tissue proportional to the weight of the body, then the coefficient of mental work, or the number of grains of urea that represent one hour's mental work of a man 150 lbs. weight, will be—

$$\text{Opus mentale} = \frac{150 \text{ lbs.} \times x \text{ grs.}}{n \times w} \quad (11)$$

where  $x$  is the number of grains of urea taken from Table K,  $n$  the number of hours' work, and  $w$  the weight of the subject in pounds.

From this formula I find—

Coefficient of No. 1 = 44·3 grs. of urea.

„ 5 = 43·7 „

„ 6 = 42·3 „

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Mean, . . . 43·4 grs.

The near approximation of these numbers to each other is very remarkable when we consider that the residual grains of urea, from which they are calculated, are 186·2, 220·4, and 163·5, respectively. It certainly proves that the hypothesis I have made, that the mental work sets up a waste of tissue proportional to the mass of the body, is very near the truth.

The kind of mental work in which Nos. 1, 5, and 6, were engaged, was much more severe than that known by the title of “office-work,” the coefficient of which in grains of urea may be computed from No. 4, by dividing 192·9 grs. of urea by 6, the number of hours of occupation, and reducing the result in the proportion of 174 lbs. to 150 lbs.

Coefficient of routine mental work }  
for man of 150 lbs. weight } = 27·71 grs. of urea per hour.

Whether we consider this kind of mental labour, or that already discussed, it is plain that they both indicate a waste of tissue of a higher order than that involved in the common *Opus mechanicum*, as may be seen from the following comparison of a day's labour in each.

1. *Opus mechanicum*, or }  
150lbs. lifted one mile, } = 136·5 grs. of urea.
2. *Opus mentale*, or 5 hours' }  
study, . . . . . } = 217·0 grs. of urea.
3. *Opus mentale*, or 8 hours' }  
office work, . . . . . } = 221·7 grs. of urea.

It remains to consider the cases Nos. 2 and 3, which are exceptional, and do not fall under the preceding investigation. This is shown by the following Table, which distributes the work of Nos. 2 and 3 under the heads already recognised, and shows a residuum not accounted for.

TABLE M.—*Distribution of work done, after deducting the Opera Vitalia et Mechanica.*

	Opus mentale.	Residuum.	Total.
Table A, No. 1, .	182·3 grs.	+ 3·9 grs.	186·2 grs.
„ No. 2, .	69·5 „	+ 300·2 „	369·7 „
„ No. 3, .	182·3 „	+ 154·8 „	337·1 „
„ No. 4, .	192·9 „	· · · · ·	192·9 „
„ No. 5, .	218·7 „	+ 1·7 „	220·4 „
„ No. 6, .	167·8 „	– 4·3 „	163·5 „

The large residuum of urea not accounted for in the cases of Nos. 2 and 3, must be attributed to disease or to some state of mind equivalent to disease. I have ascertained, since completing my observations, that No. 2 had passed a small mulberry calculus some months before I experimented on him, a circumstance which excludes his case from a discussion of the constants of healthy urine; yet I believe the main cause of the excessive discharge of urea in his case, and that of No. 3, is to be attributed to a cause which did not escape the observation of the sagacious Prout<sup>a</sup>, viz., *anxiety of mind*.

No. 2 was anxious about business matters at the time of my experiments; and No. 3 was at the same time preparing for a competitive examination, the requirements of which exceeded the efforts of the mental constitution with which nature had endowed him; in other words, his mind was overtaxed by the work which he had undertaken, and the consciousness of this caused the anxiety to which I attribute his surplus discharge of urea.

#### CONCLUSIONS DEDUCED FROM THE PRECEDING DISCUSSION.

1. The quantity of urea passed per day by men in health varies with their food and occupation, the latter being the principal cause, and regulating the other.

2. Men employed only in manual or routine bodily labour, are sufficiently well fed on vegetable diet, and discharge on an average 400 grs. of urea per day, of which 300 grs. are spent in vital, and 100 grs. in mechanical work. This conclusion is in conformity with the experience of the mass of mankind employed in manual labour in all ages and countries.

<sup>a</sup> Stomach and Urinary Diseases, p. 95. Third Edition. 1840.

3. When the work is of a higher order, a better quality of food must be supplied, sufficient to allow of a discharge of 533 grs. per day of urea, of which 300 grs., as before, are spent in vital work, and 233 grs. in mental work and the mechanical work necessary to keep the body in health.

4. The quantity of urea discharged per day varies also with the weight of the individual, which influences the vital and mental work.

5. The habits, weight, and occupation of the individual enable us to account for a range of the diurnal quantity of urea, varying from 300 to 630 grs. per day; and this discharge may be confidently predicted, when the habits and weight are known.

When, in any case, the discharge of urea exceeds that calculable from the preceding data, it must be attributed to ill health, and most generally to that most fatal of all diseases to which man is liable—anxiety of mind—a vague and unscientific expression, which, however, denotes a most real disease.

This fact alone would render the preceding investigation of importance to the physician, as it enables him, in a given case, to pronounce whether there is an excess of urea or not, and a consequent waste of the system. I have shown that the mere quantity will not decide this question, as from 300 to 630 grs. may be discharged by persons in perfect health, according to their peculiar work and physical conditions.

*Note.*—The following Table has been published by Dr. William D. Moore, of this city, since the first part of my paper was read, in the Dublin Medical Press of the 27th July, 1859, and reached me too late for insertion in my own paper.

*Quantity of Urea eliminated during 24 hours, according to Dr. Warncke.*

1.	Adult man (mixed diet), . .	33·7 grms.	520 grs.
2.	„ (vegetable diet), .	25·3 „	390 „
3.	Adult woman (mixed diet), .	26·8 „	413 „
4.	„ (vegetable diet), .	20·1 „	310 „
5.	Boy (17 years), . . . . .	19·8 „	305 „
6.	Girl (17 „ ), . . . . .	18·0 „	277 „

These results, which are the averages of 7 experiments on each individual, are perfectly in accordance with my own results, contained in Tables A and B.



ART. II.—*On Alum and Ice in Hematemesis.*

By H. R. DE RICCI.

SOME years ago I had an interesting case of hemorrhage from the stomach, which, contrary to the expectation of the medical men who attended it with me, terminated favourably. The notes of that case, together with many others, remained in my desk, till, on returning a few weeks ago, after an absence from this country of about two years, I took them out; and some interesting cases of this generally fatal disease having lately occurred, I was tempted to lay this one before the profession.

One of the cases I allude to above is the painfully sudden and fatal one of Dr. Robert B. Todd, whose loss will be felt in every place where science is cultivated, and by every member of our profession who feels anxious for its honour and advancement. The death of Dr. Todd leaves a blank, not only in Great Britain, but in the world at large, which it will be no easy matter to fill up,—for he combined in his own person two of the greatest qualities for attaining eminence, and which, though not uncommonly met apart, are very seldom indeed found united in the same individual. Dr. Todd was not only an eminent physiologist, perhaps the first physiologist of his day, but he was also *a most practical physician*,—not confining his studies to the mere theoretical investigation of nature's doings in the economy of the human frame, but applying the facts he thus was gathering and daily adding to, and improving upon rational and scientific principles, an art which, but for the light of physiology, would soon degenerate into mere routine or irrational empiricism.

My patient was a young man of about twenty-one years of age, slightly made, and of delicate appearance, but still not suffering in any way, nor complaining. He belonged to the higher ranks of life, and, mixing in the society of his own sphere, he partook freely of all its various enjoyments. He went to balls, and danced much; he went to hunts, and rode hard, yet he never seemed much the worse for his active amusements. His appetite was good, and his digestion equally so; only it was observed that he appeared always to have a craving for sweetmeats of all kinds, and at dinner he would take his meal principally of the cakes and jellies of the second course, rather than of the substantial joints which preceded it.

One day, as he was out riding, he felt suddenly weak, and as if unable to hold in his horse; he, therefore, turned home, where, immediately on his arrival, he was attacked with vomit-

ing of blood, which, though at first dark and grumous, was quickly followed by more of decidedly arterial character.

I first saw him about twenty hours after the first attack. He had been in the meantime most judiciously treated, but, unfortunately, the turpentine which had been prescribed, and which is so powerful in restraining internal hemorrhage, acted invariably as an emetic, and in consequence had reluctantly to be abandoned for other remedies.

On my arrival the patient presented the usual anemic appearance which attends profuse hemorrhage. His countenance was anxious, bathed in cold perspiration, his eyes sunk, and his pulse rapid and weak. There had not been any hematemesis for some hours previous to my arrival, and the astringent remedies which had been administered seemed for the present to be exerting a beneficial effect; we, therefore, retired to consult upon the probable origin of this bleeding, that we might be guided by as correct a diagnosis as possible, into the most rational, and, therefore, the most likely to be successful, mode of treatment.

The predominant opinion at the consultation was, that the hemorrhage proceeded from a general oozing from the mucous membrane of the intestinal tract, and this view was strengthened greatly by the abundant tarry stools which the patient had passed since his first attack. But, after attentively listening to all the evidence I could collect on the subject, and carefully examining the last blood vomited, I came to a different conclusion as to its origin and source. I believed it to proceed solely from the stomach; my principal reason for such a conclusion being the *bright colour* of the blood, it coming up in large quantity, firmly coagulated, some of the coagula being apparently accurate casts of the curvature of the stomach. Had the vomited blood regurgitated out of the duodenum from antiperistaltic action, it would have been of a very different colour, much darker at any rate, if not entirely black; and it would have been different in character also, not in firm coagula, but grumous. As for the melanotic stools, they were easily accounted for, without the aid of bleeding from the intestinal mucous membrane; in all probability there had been some hæmorrhage previous to even the first attack of hematemesis, but it had not been so great as to over-distend the stomach, and compel it to relieve itself by vomiting, and it had been got rid of by the usual process of digestion, thus tinging with blood the patient's stools. The vomiting also came on at intervals of some hours, the patient complaining of a sense of distention before, and of considerable relief after having vomited.

From these several symptoms I concluded that the origin of the hemorrhage was probably an ulcer—the “perforating gastric ulcer of Rokitansky” so well described by Dr. Cathcart Lees, which, happening to lie over the track of an artery, had eaten away into its coats; or it might be solely a bleeding from the surface of the ulcer, resulting from an hemorrhagic tendency. An objection raised to this diagnosis was, that so serious a lesion of the stomach could not have existed without our patient having previously complained of uneasiness, if not actual pain, in that region; but the disease in question (as Dr. Lees informs us) “may proceed even to perforation of the peritoneum without any premonitory symptom to lead our attention to the part.” And besides, upon inquiring, I found that our young patient had for some months complained of uneasiness immediately after eating, and that especially if he had taken solid meat. This served to confirm my diagnosis, and, having thus made up my mind as to the origin of the blood, I proceeded to select a remedy which, by acting locally on the stomach, would afford us some hopes of staunching its flow. Turpentine, as I have stated above, was inadmissible; so we tried gallic acid in full doses and acetate of lead often repeated, but we completely failed in restraining the hemorrhage, which returned every few hours. We tried matico and every other vegetable astringent that could be thought of; we even deluged our patient with Ruspini’s styptic, which had been suggested by some non-medical friend; but all to no effect.

All this time we had been giving nourishment in the shape of iced beef-tea, with eggs, jellies, and arrow-root; and when the powers of life seemed ebbing low, we had cautiously administered claret. But still the hemorrhage persisted.

After the last act of vomiting, the change in the aspect of our patient became so alarming, that for some minutes we were in doubt whether the spirit had not fled; no pulse could be felt at the wrist; the eyes were fixed and glassy; and the respiration seemed to be suspended; we quickly administered some brandy and water by the mouth, and gave an enema with chloric ether to try and rouse our patient; and, having had a brief and rapid consultation with my colleagues, to whom I succinctly explained my views, I determined to give at once a large dose of powdered alum, to pack the stomach with small pieces of ice, to place a bladder filled with ice over the epigastrium, and, in order to counteract the very lowering effects of such treatment, and avert the already impending death by asthenia, to administer brandy, ether, and other stimulants, as also food, *per anum*, and to give no nourishment by the mouth until we could

*fairly hope that a firm and satisfactory coagulum had been formed at the mouth of the bleeding vessel.* This plan I saw carried out myself, not trusting even the administration of the enemata to nurses and underlings. Every three hours the alum and ice were to be repeated, as also the enema, which consisted of the yolks of two eggs, a tablespoonful of essence of beef, the same quantity of port wine, and five grains of quinia. This was administered with the long tube, and, fortunately for our patient, he had a wonderful retentive capacity, having succeeded in holding as many as six of these injections without feeling any desire to go to stool. Slowly the weary hours crept along, as we anxiously watched for the return of that dreaded vomiting! Twelve hours had now gone by since the adoption of my plan, and no hematemesis had returned; at the same time that the freezing process had produced no ill effects upon our patient, thanks to the nourishment and stimulants he was getting per anum. We now began to diminish the alum and ice, but still persisted in giving food only by the rectum. Twenty-four hours elapsed, forty-eight hours, seventy-two hours, and no hemorrhage. We now stopped the alum entirely, and only gave a little ice occasionally, but still kept up the injections; at last, imagining all danger to be over, we ventured to give a little nourishment by the mouth, for we believed that by this time not only was there a firm clot established, but we even hoped it might be partly organized. But we were doomed to disappointment! and, ninety-five hours after the last attack, blood vomiting set in again, and in such fearful quantities that, at one moment, we believed our patient gone. Again we resumed the old plan, which had already proved of so much service: again we administered large doses of alum, and again we packed the stomach with ice, and repeated the enemas, with food and stimulants; but, though I still held out hopes to his distracted parents, I confess that I myself had very little; while my colleagues, I think, had none at all, and some even considered me unwise in persisting in a plan which apparently only seemed to disturb what, to all appearances, was a *dying man*.

But I had confidence in the plan which had proved already so powerful in my hands; I only feared the state of excessive prostration to which the last attack of hematemesis had brought our patient, and which, by so reducing the vital forces, might render him incapable of responding to the stimuli which we were now freely administering to him. I would have given anything for an apparatus for the transfusion of blood. If the patient did not rally soon from the stimulants administered, he



would die from want of blood, and if I could only extemporize an apparatus and transfuse even a small quantity of that life-giving fluid, I felt that the patient could be saved. Necessity is the mother of invention: I had with me a small pewter syringe capable of holding about four ounces; to the nozzle of this I adapted about one inch of the extremity of a gum-elastic catheter open at the end; and having got up a stout young fellow from the farm-yard, to whom I explained my object, I waited for the moment when I should perceive that life was ebbing fast, and then, trusting to Providence, make the best use I could of my very clumsy and primitive apparatus. Fortunately we never had to recur to this "ultima ratio;" the alum and ice again did their duty, as also the stimulants and the food. We persisted in the use of these a longer time than on the previous occasion, and finally, after three weeks' anxious watching, and upwards of 140 hours' absolute fasting, so far as the stomach was concerned, we had the satisfaction of seeing our patient fully convalescent.

All fear of hemorrhage once passed, we gave chalybeates and vegetable tonics, fresh air, and gentle exercise, as also food in gradually increasing quantities; and, now that several years have elapsed, I am happy to say that our patient never was in such good health as at present. All trace of delicacy has disappeared, and he is as stout and as hearty as any man need wish to be.

I do not remember ever reading anywhere of alum being prescribed in such case, or in an analogous one; and at first sight it would seem an improper remedy, as alum in large doses generally acts as an emetic, but in this case it appears to have been kept in check by the ice. It is also instructive to remark how utterly useless were all the vegetable styptics we tried, and I think I can fairly assert that we proved most of those described in books.

In conclusion, let me say a few words about transfusion of blood. Many years ago I ventured to assert, that a time was coming when *venesection* would be as rare an operation as it was then a common one; that time has very nearly arrived; I now go a step beyond, and venture to predict that a time will come when transfusion will be commonly practised, not only in cases of "killing hemorrhage," but in many case of disease also not depending on loss of blood. We have abundant proofs that not only can blood, but many different and heterogeneous fluids, be injected into the circulation of a living animal, *without the slightest peril*. The only difficulties we have to contend with in tranfusion of blood are the danger of introducing air



into the blood-vessel, the viscosity of the fluid itself, its tendency to coagulate, and the consequent danger of small pieces of solid fibrine entering the circulation. I think that the danger from the entrance of air has been much exaggerated, and at any rate a little care would be sufficient to obviate it. As for the viscosity of the blood and its tendency to coagulate, I do not despair of overcoming that difficulty also, and of so preparing the blood, *without impairing its vitality*, as to render the injection of it into a vein a matter of only ordinary care.

ART. III.—*A Case of Dislocation of the Ulna forwards at the Elbow, without fracture of the Olecranon Process; with Observations.* By EDWIN CANTON, F. R. C. S., Surgeon to the Charing Cross Hospital, and Lecturer on Surgical Anatomy.

“There is no joint in the body which, under accident, requires more anatomical and physiological knowledge than the elbow,—particularly in dislocation,—where the force required to separate the bones must necessarily be so violent as to produce extensive tumefaction of the soft parts, and conceal the relative position of the natural eminences of the joint which can alone lead to a correct judgment of the injury. Swelling, pain, and loss of motion, are not the signs by which the true nature of the accident can be comprehended; but the fixedness of the joint, and the change of the position of the condyles of the humerus with the olecranon process of the ulna, are the best indications of the displacement of the articulatory surfaces of the elbow-joint.”—B. Cooper, *Lectures on the Principles and Practice of Surgery*, p. 343. London: 1851.

So rare is dislocation of the ulna forwards at the elbow-joint without a simultaneous fracture of the olecranon process, that many authors have denied the possibility of its occurrence:—e. g. Petit<sup>a</sup>, Boyer<sup>b</sup>, Monteggia<sup>c</sup>, Sanson<sup>d</sup>, Bérard<sup>e</sup>, Savary<sup>f</sup>, S. Cooper<sup>g</sup>, B. Phillips<sup>h</sup>, Chelius<sup>i</sup>. The following writers tacitly agree with the above, by making no mention of this form of injury:—Vidal (de Cassis)<sup>j</sup>, Dupuytren<sup>k</sup>, Sir A.

<sup>a</sup> *Maladies des Os*, tom. i., p. 236. Paris: 1772.

<sup>b</sup> *Traité des Malad. Chirurg.*, tom. ii., p. 379. Paris: 1818–26.

<sup>c</sup> *Institut. Chirurg.*, vol. v., p. 71. Napoli: 1825.

<sup>d</sup> *Nouv. Elém. de Pathol. Med. Chir.*, tom. iv., p. 623. Paris: 1828.

<sup>e</sup> *Dict. de Méd.* Art. “Coude.”

<sup>f</sup> *Dict. de Scien. Med.* Art. “Coude.”

<sup>g</sup> *First Lines of Surgery*, p. 700. London: 1840.

<sup>h</sup> *Lectures on Surgery*, *Medical Gazette*, July 10, p. 615. London: 1840.

<sup>i</sup> *System of Surgery*, vol. i. p. 788. Translated by South. London: 1847.

<sup>j</sup> *Traité de Pathol. ext.* Paris: 1839.

<sup>k</sup> *Surgical Works*.

Cooper<sup>a</sup>, Adams<sup>b</sup>, Liston<sup>c</sup>, Miller<sup>d</sup>, B. Cooper<sup>e</sup>, and Pirrie<sup>f</sup>. The surgeons who have conceived the possibility of this accident taking place, and those who have seen examples of it, will be referred to in the progress of these observations.

The configuration of the articulatory surfaces of the elbow-joint and the arrangements of its ligaments to constitute the most perfect angular ginglymus in the body; the small coronoid projection in front and disproportionately large olecranon behind, with the lesser and greater pits to receive them, in flexion and extension, respectively; together with the wider range of motion enjoyed in the former than in the latter direction, fully explain why dislocation of the ulna backwards without fracture is of extreme frequency compared to the anterior displacement of the ulna with its olecranon process continuing intact. All circumstances connected with the former accident are well understood; but, with respect to the mode of production of the latter, the latest writer on dislocations observes:—"It is only as the result of very violent and extraordinary accidents, by which the forearm is forcibly flexed, or *greatly extended*, or twisted, or some other unusual or indirect way, the olecranon is placed in front of the humerus"<sup>g</sup>. Nélaton<sup>h</sup> believes that it is through a fall on the elbow whilst the forearm is *forcibly flexed*, that this luxation is produced, and he quotes a confirmatory opinion of Malgaigne<sup>i</sup>. Debruyne<sup>j</sup> has convinced himself, by experiments made on the dead body, that this displacement can only occur, according to the mechanism first pointed out by Colson<sup>k</sup>:—"1°. Par une flexion forcée de l'avant-bras sur le bras. 2°. Par un mouvement imprimé à l'avant-bras, de façon à lui faire décrire un arc de cercle autour de l'arc de l'humerus. 3°. Par une extension forcée de l'avant-

<sup>a</sup> Surgical Works.

<sup>b</sup> Cyclopædia of Anatomy and Physiology. Art. "Elbow-Joint."

<sup>c</sup> Elements of Surgery. London: 1840.

<sup>d</sup> Practice of Surgery. Edin.: 1856. <sup>e</sup> *Loc. cit.* London: 1851.

<sup>f</sup> Principles and Practice of Surgery. London: 1852.

<sup>g</sup> Hamilton, F. A Practical Treatise on Fractures and Dislocations, p. 594. Philadelphia: 1860.

<sup>h</sup> Elem. de Pathol. Chirurg., tom. ii., p. 387. Paris: 1847-48.

<sup>i</sup> "Quant à la luxation en avant, si l'on suppose une chute sur le coude lorsque l'avant-bras est fortement fléchi, il est aisé de voir que les saillies osseuses ne font nul obstacle au déplacement, et qu'il suffirait dans cette position, d'une chute sur l'olécrâne."—Malgaigne, Traité des Fractures, et des Luxations, tom. ii., p. 626. Paris: 1855.

<sup>j</sup> Mem. sur les Luxations de Coude. Annal. de Chirurg., tom. ix., p. 46. Paris: 1843.

<sup>k</sup> Archiv. de Méd. Journal complém. Thèse de 1835, tom. ii., p. 377.

bras, ce qu'il appelle 'flexion en arrière.' " In no case did it appear to Debruyn that flexion alone was adequate to the production of this peculiar luxation. He conceives, however, that it could occur where external force operated on the olecranon from behind forwards, whilst the forearm was held in a state of forcible flexion. In a case of this dislocation which came under the care of Monin, and occurring to a child between six and seven years of age, the patient fell, with violence, upon the elbow, whilst the forearm was forcibly flexed on the arm<sup>a</sup>.

The first case of this accident, I believe, distinctly recorded, was one that came under the charge of Colson<sup>b</sup>, and occurred to a lad aged 15, who fell on the right elbow while skating, at the same time that the forearm was semi-flexed, so that the weight of the body, increased by the suddenness of the fall, bore on the olecranon process, and, driving it forwards, caused it to abandon, completely, the humeral trochlea.

Having now considered the mode of production of this injury, I pass to a review of the symptoms by which it is to be distinguished:—Increased length of forearm; absence of the olecranon at the posterior part of the joint; slight flexion of the elbow (in a case, however, recorded by Guyot<sup>c</sup>, the forearm was in a straight line with the arm); tension of the integuments; projection of the tendon of the biceps, and a bony eminence to be felt internal to it; the lateral parts of the joint flattened and depressed, presenting on either side a longitudinal fossa; and posteriorly two eminences separated by a depression, or rather a gutter which extends from the posterior surface of the arm, beneath the inferior extremity of the humerus, in place of the eminence which should exist here; movements of the articulation limited and very painful; in the cases, however, of Colson and Guyot<sup>d</sup>, the joint permitted of great mobility.

It would appear from the accounts of those authors who have treated this form of accident, that reduction was accomplished with comparative facility. Debruyn remarks:—" Il suffit, après avoir par l'extension, descendu les extrémités articulaires des os de l'avant-bras au niveau de celle de l'humerus de fléchir brusquement le membre, pour voir les os reprendre leur position naturelle<sup>e</sup>."

<sup>a</sup> Journal de Chirurg., tom. ii., p. 119. Paris: 1844. Quoted from the Journal de Méd. de Lyons.

<sup>b</sup> *Loc. cit.*

<sup>c</sup> Revue Méd.-Chir., tom. ii., p. 106. Paris: 1847.

<sup>d</sup> *Loc. cit.*, p. 48.

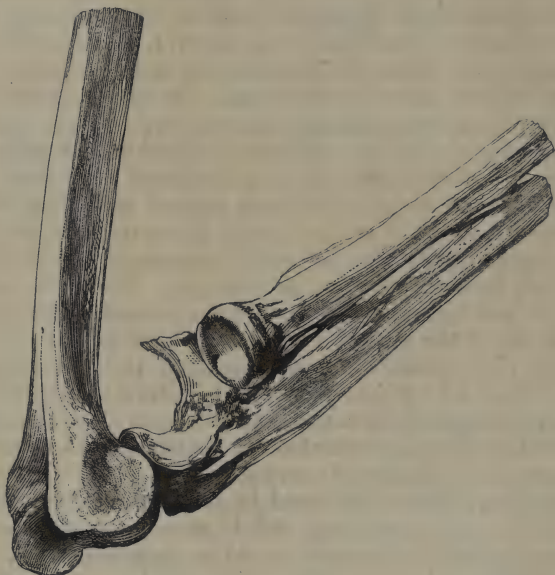
<sup>e</sup> *Loc. cit.*

The following case came under my care in the Charing Cross Hospital:—F. P., aged 40, a somewhat short, slim-built, but muscular man, while driving in a light cart at the rate of seven or eight miles an hour, was thrown out, and instinctively extended his right hand to prevent injury to his head. The weight of the body, however, caused sudden and forcible flexion of the elbow, and at the same time the forearm became twisted in under the chest. On rising, it was found that the elbow was considerably swollen, and the power of moving it entirely lost. When admitted into hospital, the forearm was forcibly flexed, and the hand supinated. The swelling, ecchymosis, and tension around the elbow were so great that it was with difficulty any of the more salient anatomical peculiarities of this part could be recognised,—everything appeared, in every way, so disarranged. The skin covering the inner condyle was stretched to the utmost, and here, over a space about the size of a sixpence, it was to such a degree injured, that a compound state seemed to be momentarily threatened. The antero-posterior and lateral diameters of the joint were increased in extent, and the general swelling was so great as to present a circumference far beyond the normal size of this region. Externally and somewhat anteriorly the cup-like cavity of the radius could be indistinctly distinguished; internally, the condyle was unduly prominent; anteriorly no particular point for diagnosis could be determined on, on account of the state of forcible flexion and great tumefaction there; posteriorly also the swelling was very considerable, but, below it, there existed a depression favouring the view that the ulna was broken immediately below its olecranon process. No median gutter, with lateral elevations to bound it, could be felt.

Attempts were made to rectify the mal-adjustment, but without success; the efforts, however, could not be longer continued, for, it was obvious that the injury already sustained by the soft parts was so extensive,—the obstacles to be overcome so resistant, and the great likelihood incurred of rendering the case one of the compound kind, forbade further trial, and it was agreed, in consultation, to place the limb at rest on a splint, and to keep the parts cool with an arnica lotion. Within the course, however, of forty-eight hours the tumefaction became still greater; a large slough was forming on the inner side of the joint, and high constitutional irritation having set in, I was obliged to amputate the limb at a sufficient distance above the articulation.



*Dissection.*—A very careful examination of the elbow was made, under my superintendence, by my pupil, Mr. Edgar Browne, with the following results:—



*Bones.*—The ulna was dislocated forwards, so that the upper surface of its olecranon process became placed in front of the capitellum humeri, and had thus assumed the position naturally occupied by the head of the radius during flexion of the forearm. The radius was supinated and maintained *in situ naturale*—as regards the ulna—by the coronary and interosseous ligaments being intact.

*Ligaments.*—Of the anterior ligament, the only part remaining at all perfect was a shreddy portion about the centre; all the rest of it had been torn through. The posterior, and both lateral ligaments were completely divided. The coronary and oblique ligaments were uninjured.

*Muscles.*—The triceps extensor was detached from all its points of insertion. The supinator radii longus was uninterfered with at its origin; but the two radial extensors of the carpus beneath it were torn away from the surfaces whence they spring. All the muscles which arise from the external condyle—with the exception of the supinator radii brevis, and



anconæus—were detached from this process. The only muscle that was torn through at its origin from the internal condyle was the flexor carpi ulnaris,—the olecranon and ulnar portions of it, however, continued intact. No mischief whatever had happened to any other of the pronators and flexors. The biceps and brachialis anticus were put greatly on the stretch.

*Blood-vessels.*—Though much shifting of their position had necessarily taken place, no vessel of large size had been injured; the sacrifice, however, of smaller ones must have been great—judging from the large amount of blood with which all the soft textures were infiltrated.

*Nerves.*—The ulnar nerve was torn across where it passes behind the inner condyle. The sheath of the median was distended, and its substance permeated with blood. The other nerves uninjured.

ART. IV.—*Contributions to the Surgical History of Syphilis.*

II. *On Syphilitic Stricture of the Œsophagus (continued)*<sup>a</sup>.

By JAMES F. WEST, Surgeon to the Queen's Hospital, Birmingham.

SINCE my last communication to the Dublin Quarterly Journal of Medical Science, on Syphilitic Stricture of the Œsophagus, I have witnessed a case which still further strengthens my belief in the frequent existence of ulceration of that tube in persons whose blood is imbued with the syphilitic virus. The symptoms in this patient were certainly not so well marked as in the two cases there related; but the ulceration had not extended so widely, or produced such a narrowing of the canal as to render the diagnosis of stricture of the Œsophagus perfectly clear and conclusive. Moreover, death did not result so much from the starvation thus induced, but from that combination of untoward symptoms which Mr. Acton has judiciously grouped together under the term "syphilitic cachexia."

The history of this patient, in a condensed form, I extract from my hospital in-patient report-book. It is needless to particularize her symptoms and condition from day to day, or to dwell on the various prescriptions which were used for her relief; none produced any permanent benefit. Mercury, used carefully in the form of dry calomel fumigation until slight salivation was produced, was thought at first to have caused some of the rupial sores to heal up; but although it may have had that effect, it probably tended at the same time to reduce her

<sup>a</sup> See vol. xxix. p. 86.

strength, and to aggravate the debility and cachexia which the syphilitic poison by itself is prone to excite in such constitutions. Iodide of potassium did not give any decided signs of amendment; but it never could be fairly tried, in consequence of the diarrhoea which its administration produced.

Syphilis had ravaged her never very vigorous constitution for months before she sought medical relief. She was reduced to a desperate condition of anemia and prostration when she presented herself for admission at the Queen's Hospital; and it was only by the constant administration of support and stimulants that her life was prolonged during the six months that she was an inmate of that institution. That such cases are far from rare in some large towns, I am perfectly convinced; they are the results of syphilis in persons of strumous habit, who have assisted in the further degeneration of their vital powers by taking insufficient and improper food; by the inhalation of the impure air of crowded courts and lodging-houses; want of cleanliness; and lastly, by drunkenness and debauchery.

That we seldom hear of them is perhaps partly owing to such patients dying either in workhouses, where the parochial medical officers have already their time so much occupied as to prevent their devoting much of it to pathological research; or else, in the squalid, poverty-stricken houses of wretched courts and alleys, where the means of making a post-mortem examination are altogether wanting; and partly to the desire which surgeons show to publish their successful cases, particularly those in which the knife may have been used for the performance of some new operation, or, still more often, of some trifling modification of an old one, in preference to those in which an unfortunate result had attended their efforts, however meritorious and long continued those efforts may have been.

Mary H., widow, aged 25, was admitted into the Queen's Hospital, July 12, 1859, with secondary syphilitic rupial crusts and ulcerations over the face and legs. The general health was extremely bad, and she was much emaciated. She stated that she contracted sores from two to three months before the rupial crusts appeared, but that she underwent no treatment for them, and was unaware of their nature until a week before admission, when a surgeon who examined her declared them to be syphilitic.

On admission, poultices were applied to the crusts, and stimulants and tonics, with liberal diet, were given internally. In the course of a week she rallied, and improved in strength and appearance; the crusts cleared off, and displayed the usual excavated circular livid ulcers of secondary syphilis. Dry ca-

Iodine fumigation was ordered, and used on four successive days, when, its effects having become evident on the gums, it was discontinued. For ten days from this time there was considerable improvement in the appearance of the sores; some of them filled up, and all took on a more healthy action; however, there was no corresponding improvement in her general condition; her appetite was very bad, and her debility seemed to increase rather than diminish. Wine, with beef-tea, eggs, and arrow-root, were allowed daily in addition to the ordinary hospital diet; decoction of bark and nitric acid were given also.

In the beginning of September the sores were looking very unhealthy and callous, and the application of nitric acid to them was therefore tried, and followed up by charcoal and linseed-meal poultices. Under this treatment the sores cleaned slightly, but showed no tendency to cicatrize. Iodide of potassium in 5-grain doses, and a mild stimulant lotion of liquor sodæ chlorinatæ were ordered on the 7th of October, and continued until the 15th, when it was found necessary to suspend them in consequence of violent diarrhœa having set in, and a new rupial sore of large dimensions (3 inches by 1) having formed on the right ala nasi. Acetate of lead and opium soon checked the diarrhœa; but the ulceration of the nose and cheek having extended, it was again necessary to resort to the use of nitric acid and charcoal poultices. The slough having cleared away, iodide of potassium in smaller (3-grain) doses was then tried, but its tendency to produce diarrhœa having again manifested itself, it was discontinued. Bichloride of mercury in small doses was then had recourse to, but without avail; she became more debilitated; the sores increased in size and number, in spite of the oft-repeated application of nitric acid and of every kind of astringent and stimulant preparation that could be thought of. Difficulty in swallowing food and medicines began to be noticed about the end of December; it attracted little attention, however, as her general condition was so bad as to preclude the hope of satisfactorily treating any affection of the fauces or œsophagus to which it might be owing. Constant exhibition of stimulants and fluid nourishment was necessary; ether and ammonia were in requisition every few hours, to ward off the fatal termination which was anticipated, and even thought to be imminent every day during the month of January, 1860. In this fearful state, unable to leave the hospital, or even to have her bed changed, she lingered on till the 4th of February, when death put an end to her sufferings.

The post-mortem examination, made 45 hours after death by Dr. Walker, revealed the following condition:—The body

was that of a small emaciated woman, whose legs were drawn up to the abdomen, in consequence of the contraction caused by cicatrization of ulcers about the knees, and whose face, legs, and trunk presented numerous patches of rupia in various stages, interspersed here and there with cicatrices of old spots of ulceration. The nose was almost destroyed by a recent ulcer, and the back was the seat of a large sloughing bed-sore. The head was not examined, in consequence of vermin swarming about it.

The heart was healthy in texture, but the foramen ovale would admit a goose-quill; weight, 6 oz.

The lungs were healthy.

The œsophagus presented a reddish, livid erosion of the mucous membrane at its lower part for about two inches, more especially just above the cardial orifice of the stomach. There was no deep ulceration or marked constrictions, but considerable fibrous deposit in the submucous tissue, which apparently diminished the caliber of the canal immediately above the chief erosion.

The liver was pale and fatty, but not hypertrophied. The knife became very greasy on a section being made; weight, 43 oz.

Spleen normal, 4 oz.; kidneys anemic, each 3 oz. The supra-renal capsules presented a limited deposit of gray exudation in the central cavity.

The mucous membrane of the *stomach* was throughout softened, and an irregular shallow ulcer, the size of a shilling, was formed on the lesser curvature.

There was slight congestion and abrasion of the vaginal surface of the cervix uteri, but the uterus was otherwise normal, and the ovaries were free from disease.

Here, then, is another instance of the existence of ulceration in a canal which has hitherto been looked upon as more free from the influence of the syphilitic poison, and less frequently the seat of its organic lesions than most of the other parts of the body. Its extent and intensity were not so great as to seriously impede the passage of fluids, but solid nutriment was, during the last five weeks of the patient's life, taken with considerable difficulty, and it is more than probable that, had the reparative powers of her constitution been greater, the ulcer of the œsophagus would have shown a tendency to cicatrize, and, from its cicatrization, diminution of the caliber of the canal would almost inevitably have resulted.

The situation of the ulceration at the lower part of the œsophagus, close to the cardial orifice of the stomach, is remark-



able, particularly as, towards the same end of the tube, a similar condition had evidently existed in the case of Jane M., previous to the stage of constriction coming on. The ulcer found in the stomach may most likely be referred to the same origin as that in the œsophagus, though smaller in size, and its appearance was very similar; it was altogether distinct in character from that which is termed the "perforating ulcer," and more nearly resembled that form of hemorrhagic erosion which is found in cases of death from burns.

The absence of tubercular disease of the lungs, and, in fact, the non-existence of any visceral lesion whatever, that would be sufficient to cause death, further assist us in arriving at the conclusion that, to syphilitic cachexia, together with ulceration of the œsophagus and stomach, which must be regarded as phenomena of that condition, the fatal termination in this interesting case must be assigned.

The girl, H. P., whose case I related in my last paper on this subject, is still living, but her condition is daily becoming more perilous. She is very irregular in her attendance at the hospital, and declines to become an in-patient. I have lately, at the suggestion of Mr. Acton, who was kind enough to express an interest in the case, given much larger doses of the iodide of potassium than I had previously exhibited, as much as twenty grains being now given for a dose, but its effects cannot be clearly determined from the cause before stated.

(*To be continued.*)

ART. V.—*Remarks on the Causes, Diagnosis, and Treatment of Arteritis.* With Illustrative Cases. By C. THOMPSON, M.D.T.C.D., L.R.C.S.I., formerly Surgeon to the Finglas and Glasnevin Dispensaries and Claremont Institution, and late Assistant Surgeon, Rifle Brigade.

CASE I.—Private Thomas Peake, Rifle Brigade, aged 19, an English labourer—a recruit—of strumous diathesis and nervous temperament, was admitted into the General Hospital at Portsmouth, on the 28th of January, 1855, with paronychia of the right middle finger. About a year previously he had fractured his right clavicle, but seemed to have recovered from the effects of that injury. He could not assign any cause for his present complaint, unless a fall that he had got some days before while "larking with his comrades." On admission, the finger was swollen, very painful, of a dingy red colour, with throbbing of the arteries of the hand and the usual symptoms of an ordinary whitlow.



*Treatment.*—Fomentations and poultices were applied, and an aperient was administered.

29th. Had a bad night. No sleep from pain in finger, which was deep-seated, acute, and of a lancinating character. Surface bluish, and so sensitive that he could not bear to have it touched. Swelling increased, extending now over the back of the hand, and to the adjoining fingers. No distinct fluctuation. An incision was made, but without giving exit to any matter. No arterial blood flowed; but only an oozing from the venous capillaries. Ordered a fomentation, with decoction of poppies, and a fermenting poultice. The saline mixture of the hospital, and an opiate pill (one grain) every four hours, with a nourishing diet, including an egg for breakfast, strong beef-tea, and a bottle of Guinness' stout.

30th. No improvement; had no sleep; pain in finger so excruciating that he kept all the other patients in the ward awake with his shouting. Finger looks darker in colour. Hand and wrist much tumefied, cold, purplish, and œdematous. Wrist at pulse imperceptible, both in radial and ulnar arteries. Fever becoming typhoid, as evidenced by rapid, weak, irregular pulse, dry brown tongue, and low delirium.

Amputation was proposed, but negatived by a consultation of medical officers, on the ground that the line of separation had not yet formed. Fomentations were repeated, and warm water-dressing substituted for the poultices, which increased the pain by their weight. Quinia, camphor, and opium were also prescribed. Same diet was continued, with the addition of two gills of port wine, and, from time to time, inhalations of chloroform to relieve pain.

31st. Had some quiet sleep from the chloroform, but otherwise no improvement. Whole hand now in a state of soft gangrene, which is rapidly spreading up the forearm. Typhoid symptoms more strongly marked. No pulse in forearm. Vesications forming on dorsum of hand, which exhales a gangrenous odour. No appearance of boundary line. Same remedies repeated, with a gill of brandy in addition to the wine.

February 1st. Mortification rapidly spreading; elbow and lower end of the arm now involved, and accompanied by constitutional symptoms, indicative of contamination of the blood. As the line of separation was not likely to form, and the patient was evidently sinking, it was resolved to give him a chance for his life by amputation. I accordingly removed the limb, by the circular operation, below the insertion of the deltoid. The removal of the diseased limb was followed by the immediate subsidence of the constitutional disorder. The

patient slept soundly that night; gangrene was arrested, and the system soon rallied under the influence of tonics and a generous diet, with a liberal allowance of porter and wine. The stump healed favourably without a single bad symptom, and in six weeks from the date of admission, he was discharged convalescent.

Had the "rule of practice" for such cases (namely, not to amputate before the formation of the boundary line) been longer enforced, in the example before us, there can hardly be a doubt that we should have realized the lines of the poet :—

"Rusticus expectat dum defluat amnis, et ille  
Labitur et labetur ;"

and have waited for a result that would never have happened; and, in the meantime, the life of the patient would have fallen a sacrifice to professional pedantry and routine.

I made a dissection of the amputated limb, and found the arteries of the forearm, and the brachial at the elbow, converted into fibrous chords. In that portion of the brachial artery that was divided during the operation, the blood was beginning to coagulate; while the tract of vessel between it and the elbow exhibited all the intermediate gradations between incipient inflammation and obliteration. The veins of the wrist and forearm also were converted into impervious chords as far as the elbow, where the superficial veins were filled with loose coagula; their lining membrane, moreover, was inflamed, thickened, and of a violet colour. No pus was found either in them or the arteries.

CASE II.—Private E. Jones, 64th Regiment, aged 23, of sanguine temperament and robust frame; an Irish labourer; two years' service; being on detachment duty, he was admitted into the hospital of 1st Battalion Rifle Brigade, at Aldershott, on the 20th of September, 1856, under the following circumstances:—He had been in good health up to the evening before admission, when he was seized with severe pain in the right great toe, which prevented him from sleeping that night. Knew of no cause for its occurrence, except the fatigue of a long march a couple of days before. When examined, the toe looked swollen and livid, and its ball was red, hot, and very tender. Had never had gout or rheumatism. No difference in the temperature of the feet, nor in the pulse of the tibials, which beat alike in both limbs. Some thirst, with slight pyrexia. Ordered a dose of calomel, to be followed by a dose of castor-oil. A hot stupe of decoction of poppy-heads and fermenting poultice to the toe, and to have saline mixture. He

was put on low diet, and at night an opiate was prescribed to procure him sleep.

21st. Had no rest on account of the pain, which was deep-seated and burning, shooting up the limb. Could not bear the pressure of the poultice, owing to the sensibility of the cutaneous surface; toe dark-coloured, but no swelling of foot, or indication that the disease was spreading. No appreciable fever. Warm water-dressing was substituted for the poultice. An opiate pill (one grain), three times a day, with refrigerants and effervescing draughts, were also ordered.

22nd. Slept better last night, and felt the water-dressing more comfortable than the poultice; less pain to-day; febrile symptoms have nearly disappeared; toe becoming dark in colour; inflammation of ball diminishing; same remedies repeated.

This state of things continued for some days, when a line of separation began to form over the middle of the first phalanx. The mortified part daily grew blacker and more shrivelled, while the rest of the foot gradually recovered its normal appearance. There was still, at times, stinging pain in the part, but not so great as to disturb his rest. In a fortnight from the date of admission the line of separation had formed. Health and appetite good; except the dead member, there remained about him no indication of disease. He was kept quiet in bed, on half-diet and a pint of stout daily. Quinia, with acid, was given for some time, and the toe was dressed with lotions of chloride of soda, nitric acid, black wash, acetate of lead, water-dressing, &c., alternated one with the other. Under this treatment absorption went on, and a furrow formed between the dead parts and the living. In another fortnight the connecting medium of bone was so far removed as to admit of the mummified toe being snipped off with Liston's cutting forceps; after which the dead extremity of bone soon came away, and the stump healed kindly. He was discharged convalescent soon afterwards.

This case contrasts remarkably with the foregoing one. Here were two young men attacked with gangrene, the result of arteritis, originating in causes that could not be explained. Both are subjected at first to a like treatment; yet in one case the disease extends so rapidly that life must soon have been lost but for surgical interference, in the removal of the part; while, in the other, the attack is arrested by the conservative powers of the system, and the dead member is thrown off by a natural amputation. To what cause are we to attribute the difference of result in two cases so similar? The explanation lies in their

diversity of organization. The diathesis of the one was strumous and irritable; while the constitution of the other was sound and vigorous.

CASE III.—Mr. H——t, aged 18, of bilio-sanguine temperament and athletic frame, a student in the Dublin University, had enjoyed excellent health until the 14th of December, 1846, when he complained of chilliness, followed by low spirits, headach, and general sense of malaise. The weather at the time was intensely cold, and for some days previously he had a fissure in the centre of the lower lip, which he was in the habit of picking, and which occasionally bled a little. About this time he accompanied a friend (who was a medical student) into the dissecting-room of the Anatomical School, in Park-street, where he spent some time handling the subjects. He was not addicted to smoking; nor had he lately taken mercury; neither was he aware of having sustained any injury to account for what followed. On the 15th he felt a swelling of the chapped part of the lip, about the size of a hazel-nut; the tumour was hard, painful, and of a livid colour. On the following day I first saw him. The lip was then as thick as a sausage (which it much resembled), very painful, nearly black, everted, and as hard as brawn. The darkness of colour gradually changed, towards the cheek and chin, to purple and dusky red. He complained of stiffness and pain in the left side of the face and neck, with headach, giddiness, nausea, and thirst. No difference in pulsation of carotids. Pulse small, weak, and frequent. Tongue coated with yellow slime; had some delirium during the night. Bowels had been well opened before I saw him.

*Treatment*.—Fomentations and fermenting poultice to lip; internally, bark, with camphor and chloric ether. His strength was supported with strong beef-tea, port wine, and Guinness' bottled stout; an opiate was given at night.

17th. Had no sleep; low delirium all night, which continues; gangrene rapidly spreading; left cheek and chin greatly swollen and discoloured; integuments hard and oedematous; left eyelids nearly closed up; constant dribbling of fetid saliva from the mouth, which he keeps half open; gums dark-coloured; fever low and typhoid. Had Mr. Cusack to see him in consultation; at his suggestion a few small incisions were made into the tumefied tissues, but no blood or matter issued from the wounds. The cut surfaces presented a smooth, black, homogeneous appearance, and a texture about the consistence of liver.

*Treatment*.—Warm stimulating dressings to the part (consisting of decoction of cinchona, with camphorated spirits of



wine); carbonate of ammonia and opium in large doses, with essence of beef, jellies, wine, brandy, &c., &c., and a terebinthinate enema. But treatment was unavailing. The mortification continued to spread over the left side of the face, as far as the forehead, extending backwards to the occiput. Tongue dry and brown; face a dirty yellow colour. The delirium had merged in coma, and respiration had become panting and stertorous. All the symptoms indicated contamination of the blood, and prostration of the vital powers. He died on the evening of the 18th. A post-mortem examination was not allowed.

Among the many publications that crowd the medical periodicals of the day, it might have been expected that arteritis would have received a larger share of attention, whether we regard it as a primary affection, *sui generis*, or as occurring secondarily in complication with other diseases. Owing to the intimate relation that subsists between the bloodvessels and the fluids circulating in them, and the manner in which they mutually act and react upon each other in states of health, it follows that inflammation of the arteries must constitute a most important link in the chain of morbid actions, and one which is entitled to a fuller investigation than has been hitherto accorded to it. As the subject has been only superficially noticed by writers on surgery, I am induced to offer the following remarks, premising a few anatomical details, a knowledge of which may be useful in elucidating the subject.

The arterial tubes are composed of four tunics:—

1st. An external coat, which consists of a thin cellular tissue, remarkable for its toughness and tenacity. In this tunic fatty deposits and serous infiltrations are never found.

2nd. The proper fibrous tunic, composed of fine circular fibres, arranged side by side in parallel rings, and elastic both in a longitudinal and transverse direction. To this resiliency is due the circular form which the divided extremities of an artery present, contrasting, in this respect, with the collapsed appearance of a cut vein.

3rd. A delicate cellular tissue, which is really only the connecting medium between the fibrous coat and that next to be described. This tissue is, however, next to the external, the most vascular of all the arterial tunics, and that in which the most important of their pathological changes originate.

4th. The internal membrane, which is continuous with the lining membrane of the heart. This membrane, in a state of health, is fine, transparent, fragile, colourless, and destitute of red vessels; but, when inflamed, it becomes vascular and rose-



coloured. Its surface is highly polished, and bedewed with a fine exhalation, which, by its smoothness, diminishes, as far as possible, the effect of friction on the velocity of the circulating current. The middle and internal tunics are as remarkable for their fragility as the external one is for its toughness and powers of resistance, and hence it is, that, when a ligature is tightly applied around an artery, the internal and middle coats are divided, while the outer one remains unbroken.

Although the large arterial trunks contrast remarkably in size with the arterial capillaries, yet the subdivisions between these two extremes of the arterial system are comparatively few in number; according to Haller, not exceeding twenty. As the arteries grow smaller by their repeated subdivisions, the combined area of their branches exceeds that of the trunks, from which they are given off in the ratio 3 to 2; so that the arterial system is said to represent a cone, the apex of which is at the heart and the base at the capillaries. The importance of this arrangement is obvious, as a safeguard against the danger that must otherwise arise from inordinate action of the heart, especially when conjoined with a redundancy of the circulating fluid.

On the other hand, the arteries possess a power of contraction (more remarkable in proportion as the vessels grow smaller), by which their caliber may be diminished almost to obliteration. This irritability in the arteries is said to be identical with muscularity, and is analogous to what is found to exist in the coats of the hollow viscera and in the urethra, in which last canal, although no anatomist has hitherto satisfactorily demonstrated the existence of muscular fibre, there exists, nevertheless, an undoubted power of contractility that answers the same purpose. This contractile power in the smaller arteries subserves an important end in preserving the balance of the circulation, the converse of that described above.

By virtue of this property, when the heart's action is enfeebled, or when the quantity of the circulating fluid is greatly lessened (as in hemorrhages, Asiatic cholera, diarrhoea, &c.), the bloodvessels are enabled to accommodate themselves to the diminished volume of their contents, without which power of co-adaptation the circulation could not be preserved.

This power of contractility is due to the large supply of nerves the arteries receive from the nerves of organic life. Around each artery (in an increasing ratio as they grow smaller) a nervous network ramifies, the filaments of which penetrate the fibrous coat, and are lost in the cellular layer that connects it with the lining membrane. The aorta, pulmonary artery, the arteries of the head, neck, thorax, abdomen, and genital

organs, all derive their nervous supply from this source (the ganglionic nervous system), while the arteries of the extremities are supplied from the nerves of animal life in their neighbourhood.

The arteries are also supplied with bloodvessels (*vasa vasorum*), which are largest and most numerous in the young. In states of health these little vessels penetrate no further than the cellular or third tunic; but (as in conjunctival inflammation), so also in inflammation of the lining membrane, red vessels can be distinctly traced into its substance.

Absorbents are not visible on the coats of any arteries except the larger trunks; but the gradual removal of coagula and effused lymph, which is known to take place, proves their existence in every part of the arterial system.

The arterial system of man, the lord of the creation, differs materially from that of the inferior animals, both as regards its proneness to disease and its powers of reparation after injury. Wounds of middle-sized arteries in man are attended with great danger, if left to the unaided efforts of nature; whereas it is extremely hard to bleed an animal to death, even from an artery of considerable size.

Mr. Porter informs us (in his able article\* on the Pathology of the Arteries) that aneurism is a disease unknown among the lower animals; and that it cannot even be produced in them. The frequent occurrence, moreover, of earthy deposits in the arteries of the human species, at certain periods of life, would appear (when taken in connexion with the foregoing facts) to warrant the conclusion at which anatomists have arrived—namely, that these peculiarities are the result of a difference of structure. It would seem, however, more rational to infer, that the difference of structure (if such there be), as well as its exemption from the morbid states that are peculiar to the human species, are both rather effects than causes, and that they mainly originate in the different habits and modes of life of animals, as well as in the shorter period of existence allotted to them. The lower animals, for the most part, eat and drink only to satisfy nature; and, their wants being few and easily supplied, they escape the evils arising out of the vicious propensities incidental to the more complex life of man, and the unrestrained indulgence of which, by vitiating his moral and physical nature, would seem to predispose to most of the diseases which “flesh is heir to.”

The pathological appearances presented by the arteries are

\* See the *Cyclopædia of Anatomy and Physiology*, by Todd.

numerous and very diversified in character. This diversity we should *a priori* be led to expect, from the varieties of structure that enter into the composition of these vessels, and from the different degrees of vascularity and nervous power with which they are endowed. The outer or cellular tunic (as we have already observed) is abundantly supplied with bloodvessels and nerves, while the inner ones, in states of health, exhibit hardly any trace of either. We, accordingly, find the results of inflammation very different, according as it attacks the internal or external tunics; in the latter case, the inflammation will be sthenic and conservative in its character; whereas its tendency in the former will be to disorganize and destroy.

In a short treatise (like the present one) it would be out of place to enter into a minute description of the various pathological states of the arteries, which the reader will find detailed elsewhere. It will be sufficient to advert briefly to a few of the most important. Those that are most commonly met with are the following:—1st. Albuminous or plastic exudation, whether occurring on the surface of the lining membrane, or between the coats of the vessel. 2nd. Steatomatous and atheromatous deposits. 3rd. Purulent formations. 4th. Ossification.

When healthy inflammation attacks the lining membrane of an artery, the result is an effusion of plastic lymph, which may accumulate to such an extent as to obliterate the canal of the vessel. This result rarely occurs in arteries of the first or second order, although several instances are on record of the obliteration even of the abdominal aorta. It is, however, principally met with in the main arteries of the extremities and their branches. This plastic material is often found in the cavities and on the valves of the heart, and in the aorta, near the mouths of its secondary branches. In such cases it usually exists in the form of vegetations of a semi-transparent, roundish, pearly appearance, devoid of organization, sometimes soft and gelatinous, but more frequently hard and cartilaginous. It occasionally happens that one or more of these little masses becomes detached by the current of the circulation, and washed into some vessel of smaller size, where it gets impacted, and, by intercepting the supply of blood, may produce atrophy, ramollissement, or gangrene of the distal parts; such accidents have happened in the carotids and iliacs. Effusion of lymph may also take place between the arterial tunics, or in the external coat, in such quantity as to encroach on the caliber of the vessel, and so lead to its obliteration, as happens in the spontaneous cure of aneurisms.

2. Atheroma is the most common of all the morbid changes

of the arteries, and may occur at any age. Erichsen found it in children of 3, 5, and 7 years old. This deposit is, however, more frequent after the middle periods of life. According to Copland, it is deposited in the cellular layer (of Haller) that connects the inner membrane with the fibrous coat; Erichsen, however, is of opinion that this last-named tunic is its proper seat. Its common situation is the arch of the aorta, and near the orifices or bifurcations of the large arterial trunks; it occurs in the form of streaks or patches of a whitish colour, and opaque cheesy consistence, and with gritty particles sometimes scattered through its substance. The deposit is at first firm, but gradually softens down into a pultaceous mass, or into a fluid resembling pus, and containing a large quantity of oil globules. Under the pressure of the circulation on the one hand and the atheroma on the other, the lining membrane gives way, and the deposit is washed away; the little pouch it was contained in presenting the appearance of a hollow ulcer, for which it may be mistaken. Around the margin of these little pouches (which are generally of a roundish form) lymph is effused, which has the effect of consolidating the coats of the vessel, and thereby preventing the blood from insinuating itself between its layers. Simultaneously with these destructive processes of the internal and middle tunics, the external coat becomes thickened by depositions of lymph, and thereby enabled to resist the impetus of the blood circulating through the vessel, and thus provision is made against the occurrence of rupture or of aneurism. While quartered in Jersey, many years ago, the writer had an interesting case in which death occurred suddenly from the rupture of one of these little atheromatous pouches into the pericardium. The seat of the rupture was in the origin of the ascending aorta immediately within the pericardium. The patient was a fine-looking young man (a sergeant in the 59th Regiment), and had enjoyed excellent health up to the moment of his death.

3. Pus is sometimes found between the coats of an artery in the form of little abscesses, which may burst and be followed by ulcers; and these ulcers again may end in rupture or aneurism. Andral found the lining membrane of the artery raised by small abscesses the size of a hazel-nut; and it is probable that many of the ulcers met with in the arteries may be the consequence of the bursting of these little abscesses. Pus is also found on the surface of the inflamed lining membrane, where it alters the quality of the blood, and causes its coagulation.

4. Next to atheroma, in order of frequency, may be classed



the calcareous concretions that are so often met with in the arteries. According to Bichat and Baillie, few people reach the age of 60 years without having formations of this kind in some part of the vascular system. They rarely occur in early life, though instances are not wanting of their having been found in children. These deposits differ from healthy bone in containing a larger proportion of phosphate of lime and earthy salts, with less of animal matter, and in the entire absence of fibres or organization; they are deposited in the same tunic that atheroma is found in, and sometimes project so far into the vessel as to obstruct its canal. In these cases senile gangrene is commonly the result. Calcification is most frequently found in the aorta, although this morbid change may occur in any of its branches. In some rare cases the osseous deposit takes place to such an extent that the whole artery is converted into a rigid, non-elastic tube, and its caliber is so narrowed as to render it incapable of accommodating itself to the varying states of the circulation. If the main artery of a limb be thus altered, and if (as mostly happens) the lower extremity be the seat of the change, gangrene will probably follow; or should the carotids become similarly affected, ramollissement of the brain will be the consequence, leading to still more serious results. Some arteries are particularly liable to this change, viz., the splenic and coronary arteries of the heart; while it is rarely, if ever, found in the œsophageal, hepatic, or coronary arteries of the stomach. All the foregoing deposits have been found in the pulmonary artery, but not at all so frequently as in the aorta and the large arterial trunks issuing from it.

Medical men have been at much pains to explain the occurrence of ossific and atheromatous deposits in arteries, and have spent in barren controversy on the subject much time that might have been more usefully employed. The question is a difficult one, and involves the consideration of that mysterious but inevitable tendency to decay that appears to be the heritage of all material beings, and which has its counterpart in the falling leaf and fading flower<sup>a</sup>, not less than in the various forms of animal life that have from age to age peopled our planet, and in succession passed away. When writers attribute these morbid changes to chronic inflammation, they only resort to an asylum ignorantiae, as regards the true cause. It may be that

<sup>a</sup> This idea is prettily expressed by our National Bard, as follows:—

“ Stars that rise and fall,  
The flower that droops in springing,  
These, alas! are types of all  
To which our hearts are clinging.”



chronic inflammation, by impairing the vital cohesion of the coats of the artery, *does predispose* it to these changes; but calcareous deposits have frequently taken place in parts independently of inflammation, and, on the other hand, increased vascularity has quite as often occurred in organs without being followed by osseous concretions. Some ulterior cause, therefore, must be in operation, and this cause we believe to be the decay of the vital powers, "that creeps on with petty pace from day to day," as life advances, and which may be recognised by its effects on all the bodily functions, the secreting and assimilating powers among the rest. But other causes concur in producing this result; of these, we believe the most efficient to be the gouty diathesis. This state of the system is always characterized by an excess of urea and of the phosphatic and earthy salts in the blood. The period of life at which it is developed varies according to the habits and constitution of the individual; it sometimes attacks the young, not unfrequently the middle-aged, and often the old; but at whatever age it occurs, its effects are the same, and these are impaired powers of nutrition and assimilation, chalky concretions in joints, atheromatous and ossific deposits in arteries, &c. It is true that, by proper medical treatment and a suitable diet and regimen, these morbid states of the blood may be corrected, and the *vis vitæ* be prolonged; but, after all, it is only a question of time, and, sooner or later, the seeds of decay, implanted in our organization from the first moment of our being, will produce their destined fruits, and fulfil the fiat, "Dust thou art; and unto dust shalt thou return."

There is a close analogy between the diseases of arteries and veins in some respects, although they differ materially in others; and especially as regards the severity of the constitutional disorder that accompanies their inflammatory attacks. Veins are more prone than arteries to inflammation and varicose dilatation, and, as a general rule, inflammation, occurring in them, is attended with greater prostration of the vital powers, and with fever of a more typhoid character. Pus is more frequently found in the veins, and, once existing in them (whether as a result of phlebitis or of absorption from other parts) more readily finds its way into the circulation, and is more rapidly followed by those symptoms that indicate contamination of the blood. Perhaps the larger endowment of nervous influence, which the arteries receive, may modify their susceptibility to inflammation, and, when it *does* occur, impart to it a more sthenic character.

There is a striking discrepancy between the results of in-

flammation attacking these two classes of vessels, which deserves to be noticed. In arteritis, the plastic effusion is washed away by the pulse from the part of the vessel where it is formed, and carried on towards the terminal branches and capillaries, where it clogs the canals of these little vessels, and thus produces gangrene.

In phlebitis, on the contrary, the tendency of the circulating current is to carry the morbid products of the inflamed vessel towards the heart, to be thence diffused throughout the system. This unfortunate result is sometimes prevented by the formation of a coagulum; the plug, thus formed, intercepting the communication between the inflamed lining membrane and the centre of the circulation. Thus, we find that a process which is fraught with danger in arteritis may become a source of safety in inflammation of the veins; and hence the importance, in the treatment of phlebitis, of selecting remedies which have the property of increasing the crasis and coagulability of the blood.

There is another difference between the arteries and veins (interesting in a pathological point of view), namely, that ossific deposits, of such frequent occurrence in arteries, are rarely found in the veins. Nor is their difference in structure enough to explain this exemption; for, according to Andral, there is no diversity in structure between the pulmonary artery and the aorta, or between the cavities on the right and those on the left side of the heart; and yet ossific deposits are much more commonly observed in the aorta and left cavities than in the pulmonary artery and right side of the heart. The difference in the quality of the blood and the peculiarities of the circulation in each, may help to account for the discrepancy.

The causes of arteritis may be divided into those that are of idiopathic origin, and those that act on the frame from without. In the latter category may be included all wounds and injuries, whether the result of mechanical violence or of surgical operations. Among the predisposing causes of the complaint may be specified the following:—The gouty or rheumatic diathesis, and the poison of syphilis; plethora, especially when conjoined with the sanguine temperament, and occurring at the middle or advanced periods of life; repeated epileptic seizures; cutaneous eruptions; disease of liver, kidneys, or of any of the excreting organs, attended with impairment of their eliminating functions; to which may be added the suppression of accustomed discharges; articles of diet which are unwholesome or difficult of digestion; salt meat that has been too long kept, and especially pork; the abuse of wine, spirits, or malt liquors;

and still worse, of the drugged compounds sold under those names. In short, whatever tends to produce excess of the fibrine of the blood, to vitiate its quality, or to impart to it irritating properties, will predispose to arteritis.

Any of the predisposing causes, if intense or long-continued in its operation, may become an exciting cause. The most efficient are acute rheumatism and gout, the metastasis of which from external parts may be followed by endocarditis extending throughout the aorta and arterial trunks; the repulsion or premature disappearance of the exanthemata, and especially of erysipelas, scarlatina, or variola. According to Copland<sup>a</sup>, some of the worst symptoms attendant on the secondary fever of small-pox proceed from the effects of arteritis, induced by absorption of the variolous poison into the circulation.

Violent stretching of parts, causing laceration of the internal tunics of the vessels, frost-bite, prolonged exposure to very high or very low ranges of temperature; absorption of pus, or of morbid secretions (as in the puerperal states): or inoculation with animal poisons, as in Case III.; and to these causes may be added intense and prolonged mental emotion, or exhaustion of the vital energy from whatever cause.

*Description.*—Arteritis presents itself under two forms—the adhesive and the diffuse. The adhesive form is usually of idiopathic origin, though occasionally the consequence of wounds or external injury, occurring in young and vigorous constitutions; healthy lymph is effused from the inflamed lining membrane. This plastic material may be washed away by the pulse from the surface where it is formed, and carried on towards the smaller branches. By degrees, however, it accumulates, and a coagulum forms, which plugs the canal of the vessel as high as the next large collateral branch. The attack may be confined to one artery, or only to a part of the arterial tube; or the inflammation may involve the collateral branches, and spread along their ramifications, until it reaches the capillaries. In such cases, gangrene of the parts that derive their nutriment from the obstructed vessel will follow, unless the anastomosing branches are sufficiently large to admit of a collateral circulation; or unless the progress of the case be so slow as to allow time for their enlargement.

It occasionally happens, when arteritis attacks only a part of the tube, that, as the inflammation subsides, the effused lymph is absorbed, and the canal of the vessel is restored, the blood

<sup>a</sup> See the article on "The Arteries," in Copland's Dictionary of Practical Medicine, to which I am indebted for much information on this subject.

circulating through it as before, and the part perfectly recovering its functions. This I believe to be a rare occurrence, obliteration being the more common result. Prior to the occlusion of the vessel, portions of the effused lymph, washed away by the pulse, become entangled in the terminal branches or in the meshwork of the capillaries. Complete stoppage of the circulation in the part succeeds, ending in gangrene. If the disease be arrested, and the gangrene spreads no further, nature separates the dead tissues from the living, and the mortified part is removed by a natural amputation, the artery, as far as the next collateral branch, becoming converted into a ligamentous cord.

When arteritis spreads along the ramifications of an artery until it reaches the capillaries, the result has been said by writers to constitute "common inflammation." This theory of inflammation is, however, refuted by the fact, that in phlegmon the inflamed tissues are gorged with blood, owing to the loss of contractility in their capillaries; the result is that, if an incision be made into the part, *florid* blood flows freely. But, in capillary arteritis, the minute vessels become so clogged with lymph (the product of inflammation) that there is hardly space left in them for a circulating fluid. In such cases (which mostly end in gangrene) incisions will be bloodless, so far as arterial blood is concerned, although there may be an oozing for a time from the veins, unless (which is a frequent accompaniment) they too become involved in the inflammation.

Arteritis may attack one or more arteries in the parenchyma of an organ. The result will vary with the extent of the inflammation and the size of the vessels affected. If the arterial branch be large, its obliteration may be followed by the death of the part it supplies (as in gangrene of the lung); but should the obstructed artery be of smaller size, or the inflammation be more partial, there will result only a deficiency in the nutrition of the part, leading to atrophy or ramollissement. This lesion is often found in the brain, and may become the precursor of apoplexy, palsy, or other disorders of the encephalon.

Diffuse arteritis is a more formidable disease, as well on account of the greater extent of the vascular apparatus involved, as from the rapid deterioration of the blood and prostration of the vital powers that are sure to follow in its train. This form of the disease commonly originates in external injury, occurring to patients of previously broken-down constitution. It may follow the absorption of morbid poisons, and occasionally assumes an epidemic character in the tainted atmospheres of over-crowded hospitals. It has been observed in cases of te-



tanus, and is a not unfrequent complication of some malignant fevers, especially those that attack Europeans who have recently arrived in tropical countries. It always accompanies diffuse inflammation, with which it may be said to be identical. The inflammation, which is erysipeloid in its character, attacks only the internal coats, rapidly spreading along the arterial trunks towards the heart itself. Healthy lymph is not secreted, but a thin ichor exudes from the inflamed lining membrane, which does not coagulate, but is washed on towards the capillaries. The capillaries in their turn become irritated and inflamed, and the morbid action is propagated thence to the veins, through which the diseased products are conveyed into the general circulation.

*Symptoms.*—The symptoms of acute arteritis, in its early stage, are obscure, and not easily distinguishable from those of common deep-seated inflammation. They may be divided into those that have their seat in the diseased vessel or vessels, and those which are observed in parts more remote, but which are nourished by them. But, though obscure in its origin, arteritis may be soon recognised by its effects. It usually begins with rigors, alternating with hot skin, thirst, and general pyrexia. There is a sense of heat, soreness, and tension, along the track of the inflamed vessel, which is followed, sooner or later, by disorder in the parts it supplies. When the affected vessel lies deep (like the femoral or tibial), there is no superficial redness. If the main artery of an extremity be attacked, there will be numbness and pricking pain in the distal parts of the limb, which, after a time, become pulseless, cold, dark-coloured, and œdematous. In these cases, there is not only deep-seated pain, radiating in all directions through the limb, but the cutaneous sensibility becomes extreme, and this superficial pain is constant throughout all the intermediate stages of gangrene, until the complete death of the part. When this termination happens in patients of strong vital energy, the line of separation (already described) will probably take place, and after the spontaneous removal of the disease the patient may recover. But should the line not form, or amputation be contra-indicated, the patient will die with symptoms identical with those that attend the diffuse form of the disease.

Attacks of local arteritis may end in resolution; the fibrinous deposits may be absorbed, and the artery be restored to the integrity of its functions; but this termination is exceptional, obliteration being the common result in such cases.

When arteritis is general, and especially if it involve the cavities of the heart, it will be attended with fever of a very



inflammatory form at first, but rapidly changing to the typhoid character. The symptoms in its early stage are those of common inflammatory fever, viz., rigors, followed by heat of surface, lassitude, headach, thirst, and arrested secretion. After a time these symptoms are succeeded by a sensation of burning heat, with soreness in the precordia, and radiating along the track of the great vessels. The action of the heart becomes tumultuous and irregular, with bellows sound and violent throbbings of the arteries throughout the frame. Respiration is hurried and difficult; the countenance anxious and injected, and the skin hot and pungent. The patient cannot sleep, but tosses about with an uncontrollable feeling of distress, which he is unable to localize or define, and which contrasts with the apathy and disinclination to move so constantly met with in ordinary fever. Actual pain is seldom complained of, but an indescribable oppression and dyspnœa about the heart and lungs—amounting to orthopnœa at times. This last symptom was remarkable in some cases that occurred among the soldiers of the 80th Regiment, during the siege of Delhi, and for a description of which I am indebted to my friend, Dr. Irvine, the surgeon of the regiment. Unquenchable thirst is a constant symptom; the bowels, at first constipated, become relaxed as the disease advances, and are attacked in the last stage with diarrhœa or hemorrhage. The secretion of the kidneys is scanty, very high-coloured, and voided with scalding and difficulty. As the disease progresses, the fever becomes more typhoid, and the pulse more rapid, weak, and irregular. Palpitations are frequent, sometimes followed by a purring tremor in the region of the heart, and a tendency to syncope. The colour of skin on the face and trunk is a dusky yellow, while the extremities are mottled with livid ecchymoses or vesications. The tongue, at first moist, and coated with a yellowish slime, becomes, towards the last stage, dry and brown, with red edges, or smooth and glossy. The teeth and gums are covered with dark sordes; hiccup and involuntary evacuations succeed, and the low, muttering delirium is followed by coma, ending in convulsions and death.

*Diagnosis and Prognosis.*—The diagnosis of arteritis in its early stage is often attended with difficulty, and the danger of mistaking it for another disease in some cases is quite as great as that of overlooking its existence altogether in others. The great arterial trunks are, like other parts of the frame, liable to neuralgic affections, which are accompanied by increased pulsation, acute pain, and bellows murmur. These symptoms ought not to be confounded with inflammation, from which

they are to be distinguished by the suddenness of their accession and departure, and the absence of the constitutional disorder that usually accompanies that state; violent pulsation, moreover, may occur, unassociated with pain, as in the case of chlorotic females, and nervous patients, or those who have suffered from the debility consequent upon large losses of blood. It is a not uncommon symptom in some forms of dyspepsia. The previous state of the patient's health may throw light on the subject, and especially if he has recently suffered from gout, rheumatism, or any of the exanthemata. In arteritis the symptoms are more diffused, and there is not (unless in the local form of the complaint) the concentration of morbid action that, more or less, characterizes visceral inflammations. The complaints most likely to be confounded with arteritis are some forms of idiopathic fever. When it occurs as a sequel to small-pox or the exanthemata, its nature is less liable to be mistaken. It is characterized by a sense of burning heat along the course of the great vessels, accompanied by violent throbbings of the arterial trunks, which are propagated to the smaller branches, and generally attended with bellows sound. On exploring the chest and abdomen, the viscera will generally be found free from disease, except the heart, which is often implicated. When arteritis attacks the main artery of an extremity, the local symptoms of inflammation will soon be followed by coldness, lividity, want of pulse, œdema, and vesications of the distal parts of the limb. There is not the superficial redness that accompanies phlebitis or lymphangitis. Nor has the affected artery the contorted, knotty feel and appearance which are observed in inflammation of the veins.

The prognosis is, for the most part, unfavourable, whether we regard the immediate result (as in the acute form), or the not less formidable consequences that slowly but surely follow the chronic states of the disease. When it supervenes on variola or erysipelas, or when it is produced by the absorption of morbid poisons, the danger is especially great; and the same remark applies equally to the diffuse form of the complaint, in whatever causes it may have originated.

*Treatment.*—The indications of treatment are as follows:—  
1st. To subdue vascular excitement and arrest the disease.  
2nd. To relieve pain, and procure absorption of effused lymph.  
3rd. To promote the free action of the emunctories. 4th. To support vital power. To accomplish the first of these indications, we are taught by systematic writers that general blood-letting is indispensable, the alleged object being to diminish the fibrinous and albuminous elements of the blood, which, in the

adhesive form of the complaint, are always in excess. I concur in the object in view, but entirely dissent as to the means of attaining it. In puerperal females and patients suffering from acute rheumatism, or the exanthemata, the fibrinous and albuminous constituents are in excess, and would continue so, to whatever extent depletion might be carried: but who, now-a-days, would resort to such treatment? I confess that I have long ceased to have faith in phlebotomy as a means of cure; and, whatever may have been its supposed efficacy in by-gone times (when the type of disease may possibly have been different from what it now is), or however numerous the patients who had the good fortune to survive not only their complaints, but the means employed to cure them, I believe there are few enlightened practitioners of the present day who continue to advocate so clumsy, I had almost said so barbarous, a remedy. It *is* truly a heroic remedy,—but, in nine cases out of ten, heroic not for good, but for evil. I deny that it affords any relief in visceral inflammations, that might not with greater certainty be attained by other means; and I assert, from personal observation, that it has sealed the doom of many a patient, who might have recovered if left to the conservative resources of nature.

The excess of fibrine which exists in the adhesive form of arteritis will be most effectually reduced by inducing a free action of the skin, kidneys, and bowels, by means of suitable diaphoretics, diuretics, and oleaginous purgatives, with the aid of diluents and a bland farinaceous diet. The bowels having been first opened with calomel, followed by castor-oil, antimonials, combined with refrigerant salts (such as the nitrate and acetate of potash), and with hyoscyamus in camphor mixture, will be found very useful in calming vascular excitement, and promoting the functions of the skin and kidneys. Effervescing draughts also, with excess of acid, and iced lemonade, will be beneficial and grateful to the patient. But, in the measures we employ to diminish the excess of the fibrinous elements of the blood, we must be cautious not to go too far, which would have the effect of rendering the system unable to check the extension of inflammation by the effusion of healthy lymph, and of thereby converting the adhesive into the diffuse form of the disease.

In local arteritis, which is a very painful complaint, opium will be found a valuable auxiliary. If the main artery of the limb be attacked, the part ought to be kept well raised, and relays of leeches should be applied, followed by hot stupes of decoction of poppy-heads, and poultices of hot camomile

flowers (wrung out of the same decoction), and enclosed in flannel bags. These may be alternated with water-dressing, covered with gutta-percha, or, if the part feels very hot, a refrigerant lotion may be more comfortable. Pounded ice in bladders sometimes affords relief when other applications fail; but, as a general rule, the cutaneous sensibility, in arteritis attacking the limbs, will render the patient unable to bear the weight of poultices.

Absorption of fibrinous concretions will be best promoted by small doses of calomel, combined with opium and colchicum or tartarized antimony, provided there be no idiosyncrasy to contra-indicate the use of mercury, and that the vital energy of the patient be not below par, in which case colchicum, antimony, or mercury would be inadmissible. The diet should be low, and chiefly farinaceous, and perfect tranquillity be enjoined, both of mind and body.

It has been already stated that the fibrinous elements of the blood are deficient in the erysipeloid or diffuse form of arteritis, and hence the inability to form plastic lymph, and the tendency to spread, by which this form of the complaint is characterized. In these cases chlorate of potash, camphor, turpentine, quinia, the mineral and vegetable acids, and the more astringent of the metallic salts (viz., the sulphate or sesquichloride of iron), with chloric ether and hyoscyamus, will be indicated, and the strength must be supported with strong beef-tea, jellies, wine, brandy, &c.

In the treatment of blood diseases I am fully sensible of the beneficial effects of medicines, judiciously prescribed; but we must not rely on them exclusively. The human frame is a mysterious laboratory, in which the *vis medicatrix* is the most potent agent, and in which she decomposes and recombines the elements of our organization in a manner which is as yet nearly a sealed book to us. In certain states of the urine, acids are indicated, and in others alkalies. We know that alkalies have the power of diminishing the fibrinous and albuminous constituents of the blood, while the acids and some of the metallic and alkaline salts augment its crasis and coagulability. These remedies ought, therefore, to be prescribed, according to the peculiarities of the case, but with a due regard to the most important indication of all, namely, to support the vital power, which presides over and directs all the functions of the frame, and without whose co-operation all other means are powerless.



ART. VI.—*Practical Remarks upon Stricture of the Rectum, especially in relation to its Connexion with Fistula in Ano and Ulceration of the Bowel; with a new and improved form of Bougie for the Treatment of this Affection.* By JOLLIFFE TUFNELL, F. R. C. S. I., M. R. I. A.; Surgeon to the City of Dublin Hospital, &c. &c.

IT is not my intention on the present occasion to enter into a lengthened dissertation upon the pathology of stricture of the rectum, and of the various causes leading to its production; but rather to offer a few practical observations upon its treatment, especially in connexion with the introduction into practice of a mode of dilatation at once simple, effectual, and safe; since any improvement that can be effected in the treatment of a disease so insidious in its approach, so distressing in its effects, and so fatal in its consequences when neglected or overlooked, as stricture of the rectum, cannot, I believe, but be more or less acceptable.

I have personally experienced so much benefit from the employment in practice of the form of instrument which I am now about to recommend, and found it to possess such advantages over all the other kinds of bougie hitherto in use, that I can most confidently advocate its general adoption in all cases where treatment by dilatation is desirable.

I do not, of course, anticipate favourable results in strictures so highly seated as to be out of direct command; but these are exceptional cases, and, in the vast majority of instances as they occur in practice, the stricture will be found so situated as to be readily amenable to treatment; and, no matter how much the general health of the patient may be broken down (provided the attendant cachexy be not consequent upon malignant disease or phthisis, but the breaking up of the constitution occasioned by the stricture) in every such instance will health be restored upon the disease being overcome. I recommend it, then, for all *accessible* cases of stricture of the rectum, where, as the result of simple inflammation, the disease engages the mucous and sub-mucous tissues with the fibro-cellular coat of the intestine, and where these strictures have become blended together into one firm, homogeneous mass, wholly or partially engaging the circumference of the bowel, thereby rendering it undistensible, and preventing it from responding to that sympathetic action of the bowel which in health induces a regular delivery of its contents.

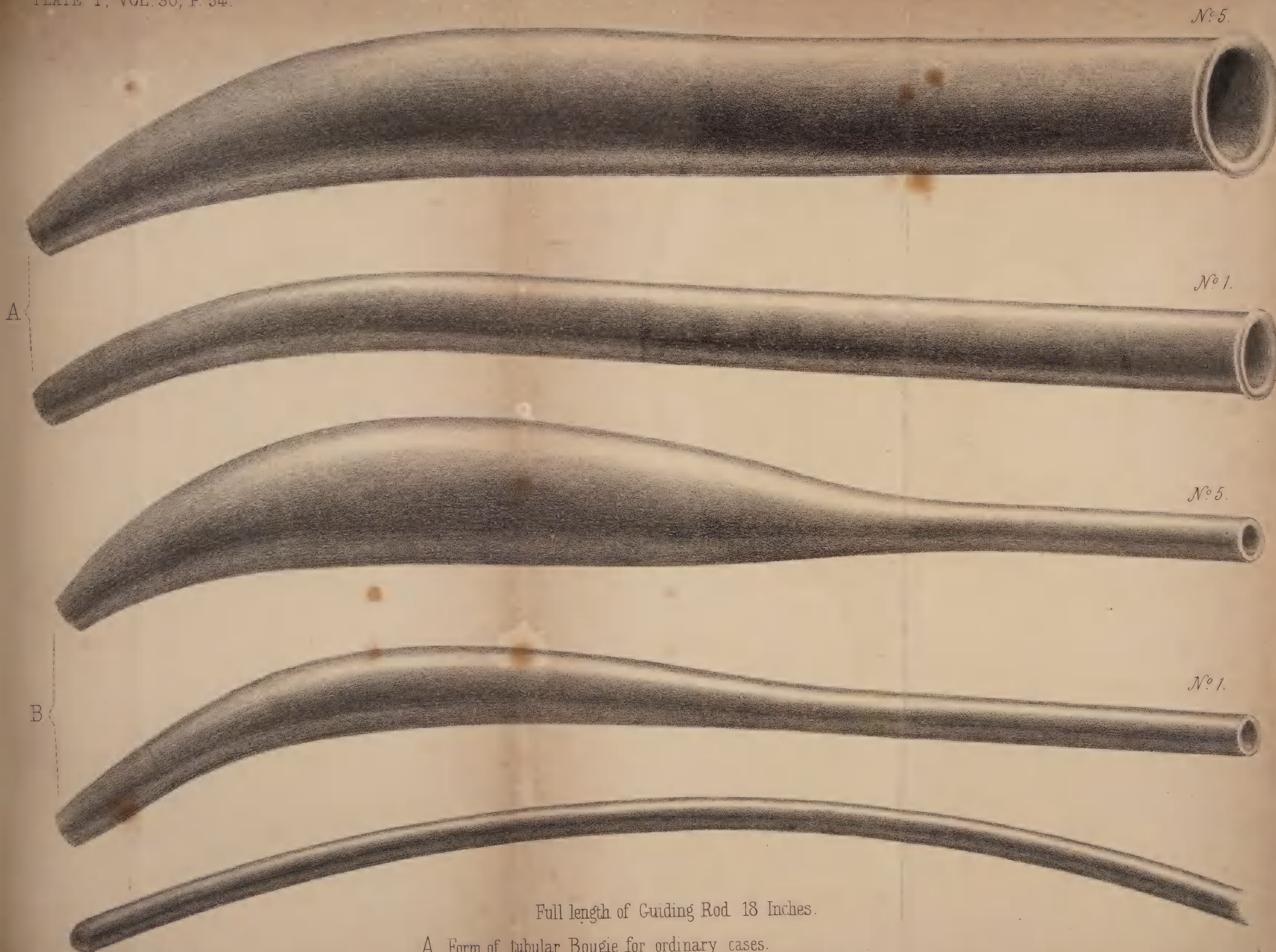
Whether this state of things be idiopathic, or following upon the cicatrization of one or more ulcers, as occurs often in



the progress of dysentery, is, as regards the mechanical treatment, a matter of no importance; although of vast consideration in reference to the constitutional measures to be adopted. In the present case (that now about to be detailed), I do not hesitate to conclude that the stricture arose as a consequence of dysentery, because this disease, in a severe and chronic form, had pre-existed.

The case itself I shall now proceed to describe, together with the circumstances connected with it, which led me to construct the instruments for its relief which I have figured in the plate attached, and which from experience I can so strongly recommend. The case is as follows:—In the summer of 1858, I was consulted by a gentleman, aged 42, for fistula in ano. His general health was greatly impaired; he was nervous and irritable to a degree; he had no appetite, and what little food he did take, he was unable to digest. He bore the appearance of a man who had suffered from climate, and, in reply to my inquiries as to tropical residence, he stated that he had been in India for some years, but had been obliged to return in consequence of his health giving way. Upon questioning him as to his antecedents, he stated that from childhood he had never been very strong; that he was delicate, and, as far back as he could recollect, had been always suffering from indigestion and derangement of the *primæ viæ*.

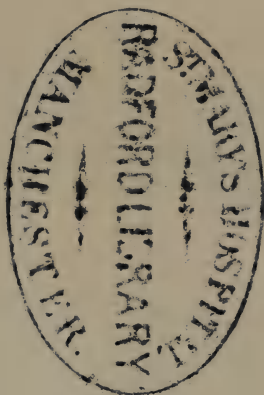
In 1839 he went to India, being then upwards of 20 years of age. On board ship he suffered from constipation, and, shortly after his arrival in the country, had acute inflammation of the liver, which was succeeded by dysentery, for he stated that he had frequent discharge of stools of a mucous character, tinged with blood, accompanied by great straining and tenesmus. For this attack (which he himself believed to have been one of piles, but which was evidently of dysentery, in a sub-acute form) he was freely leeches around the anus. He did not, however, permanently recover, and after several consecutive illnesses of more or less duration, was, in 1846, obliged to return to England, and relinquish the position he held. He was now suffering from urgent and frequent calls to stool, with straining of the bowels, and great irritation of the urethra, the alvine evacuations being of scybalous character, and he suffered frequently from rigors. He continued in invalid health, sometimes a little better, but always more or less in pain, until 1857, when an abscess formed by the side of the rectum, which burst and degenerated into fistula. All his symptoms now became aggravated, and from this date until July, 1858, his life was one of continued misery. It was now that I first saw



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him. Although dreading the operation, he felt compelled to submit to it, and it was with a view to having it performed that he sought my aid. The shattered condition of his health at this time might have induced a suspicion that he was labouring under pulmonary disease; but careful stethoscopic examination gave no such indication, and the whole history pointed to the alimentary canal as being the seat and origin of his disorder. In consequence of his extreme sensitiveness to pain, and general apprehension and shrinking from examination of the bowel, I deemed it advisable to place him fully under the influence of chloroform, and it was whilst in a state of perfect anæsthesia that I was enabled to make the searching examination which informed me of the full and extensive state of the case. I need hardly observe that the fistula was but a mere concomitant of the more serious disease which existed in the form of organic stricture of the bowel, all but obliterating the canal with the cavity of the intestine below in one mass of ulceration, the membrane almost hanging in shreds. The indication as to treatment was evident; a passage for the intestinal contents *must* be speedily effected, or the patient succumb to the wearying consequences of the disease. The aperture existing in the stricture was so small as barely to admit a fine urethra bougie; it was, in fact, all but closed. Any attempt to introduce an ordinary rectum bougie would have been out of the question, for not the slightest pressure of a continuous kind could indeed have been borne by the patient. Under these circumstances it became necessary to resort to some method that would enable me to *command* the stricture, and for this purpose I determined to adopt a modification of Hutton's railway catheter, or Wakley's urethra tube, and so, penetrating the contracted mass, gain access to the gut above, and evacuate the contents lodged in the intestine, thus obviating the constitutional distress under which he was suffering. I did nothing more at that visit, but, prior to the next, provided myself with the following apparatus:—I took a piece of very fine gutta percha cord, equal in size to about a No. 8 urethra bougie, and in length 18 inches; next, a portion of gutta-percha tubing (just sufficiently large to pass freely over the cord), and, softening one end of this tubing in boiling water, I drew it out so as to make it slide *with a feather edge* over the central rod or guide. In this way I at once secured the command of the stricture, and, by manipulating the solid piece of gutta percha through the stricture with my right hand, guided by the forefinger of the left, and sliding the tubular sheath over, I was enabled to pass unhesitatingly through the narrowed portion

of the gut, to dilate the stricture itself, and also to discharge through the central cavity of the bougie the secretions and excretions which were detained in the intestine above. Each and all of these objects were at once obtained, and the rectum unloaded to an extent which it had not been, I believe, for years before. The progress of the case from this moment was most satisfactory. The bougie thus introduced was passed at first every third day, and allowed to remain in for nearly an hour; after this, every fifth day, and longer retained; subsequently, once a fortnight, and the size correspondingly increased, until an instrument of the dimensions of No. 5 in the illustration passed readily through the stricture.

The general health of the patient rapidly improved, and all the sufferings which he had formerly attributed to the fistula ceased; indeed, the little that its presence really had to say to the case is proved by the circumstance that he has declined to have it operated upon since, preferring to submit to the slight annoyance which it does occasion than to be subjected again to division.

Now, in disposing thus summarily of this case, let it not be supposed that the mere dilatation of the stricture was the only matter considered in the treatment, or that even the mode of introduction and the passing of the bougie are not subjects requiring judgment, and of the greatest importance in the conducting of the case. The remarks upon treatment, general and local, of stricture of the rectum, which I should have to make upon the case now before us, are applicable to almost every other, and, therefore, I shall beg to offer such observations as may bear upon the subject generally. I shall first take the "local treatment," and under this head bring to notice the following essential points, viz:—

1. The form of bougie to be employed.
2. The question as to the administration of chloroform during introduction.
3. The position of the patient during this time.
4. The period during which the bougie should be retained.
5. The after-treatment by injections, plain or medicated.
6. The question of division by bistoury.
7. The treatment of coexisting ulcers of the bowel, and fistula in ano.

Firstly, as to the form of bougie to be resorted to. These instruments, as hitherto employed, have been variously constructed as to material, consisting of wax, gum-elastic, ivory or bone, polished metal and membrane; but all similarly circumstanced in this one respect, viz., that they have had no

central cavity admitting of an artificial exit for the intestinal contents, and entrance for such medicaments as the surgeon may choose to apply to the structures implicated in the disease. It would be a contradiction were I now to introduce an instrument purporting to be superior, and advocate then the employment of any other; but it is not from prejudice or fancy that I recommend its adoption, but from the conviction that in practice every object that can possibly be obtained by the old pattern is equally gained by the new, with additional advantage. Being a hollow tube, no sooner is the central guiding rod withdrawn, than free exit is given to mucus, pus, blood, or other fluid secretion which may be lodged in the pouch-like cavity which exists almost invariably above the stricture; and not only are these otherwise retained, and decomposing matters drawn off and got rid of, but, by fitting the nozzle of a syringe to the free end of the bougie, by means of a coupling-joint of vulcanized rubber, a stream of tepid water may be gently thrown up into the cavity of the intestine above the stricture, breaking up any solid lump of fæcal matter that may be lodged, thereby freeing the patient of the accumulation which forms the main source of irritation, and relieving him from the principal cause of suffering in this disease.

I advise, then, for the reasons stated, the employment of a tubular gutta-percha bougie, of suitable dimensions, and of one or other of the forms depicted in the illustration; the small stemmed for preference, if the bulk of the larger be considered as likely to prove a source of inconvenience, by its distending the anus.

Next, as to the administration of chloroform during the introduction of the bougie. Now, however useful the employment of an anæsthetic may be for the purpose of making any primary or exploratory examination of the bowel, I am satisfied that the subsequent distention of the stricture by the bougie should not be carried on under its use, and for this reason, namely, that an undue amount of injury is likely to be inflicted upon the intestine when the patient is unconscious, which will be afterwards resented by the system; and fever or feverish action may be excited in consequence, from which the health of the individual will correspondingly suffer. So far, indeed, from time being gained, and the process of cure accelerated, it will, in all probability, be materially retarded by so doing.

The plan now introduced affords the means of conducting a bougie safely and *certainly* through a stricture, no matter how contracted the orifice, how tortuous its course, or how diseased the coats of the intestine may be. Still, this is no

reason why its power should be abused. Instead, therefore, of any violence being exerted, the utmost gentleness should be employed in its use. The bougie should be but *coaxed down*, as it were, over the guiding rod, and then through the stricture with a slightly spiral motion, and a steadily impressive force.

Thirdly, the position of the patient during its introduction. Here the sex of the individual must be the determining agent. If a female, the bougie must be introduced whilst recumbent upon the right or left side, as most convenient to the surgeon himself; but if a male, the lithotomy position is to be preferred, because it gives a more perfect command to the operator over the parts concerned, and his power of conducting the bougie and steadiness in progressing it are infinitely greater. As soon, however, as the stricture is passed, and all difficulty overcome, then let the patient turn over upon his side, and lie, warmly covered up, for whatever time may be appointed for the retention of the instrument. I say warmly, because I have found in these cases that (as a general rule) there is an extreme sensibility to chilliness, and that the individual will feel much more comfortable and less uneasiness, if this apparently trivial point be attended to. As for the period of time during which the bougie should be allowed to remain in the stricture, this must be regulated entirely by the patient's feelings, and will, of course, also be influenced by the amount of distention exercised over the stricture. The object is to promote absorption of the effused and consolidated matter encircling and encroaching upon the intestinal tube. To effect this object, the pressure exerted should be *as long continued as possible without causing irritation*, and therefore the motto, "*festina lente*," should always be borne in mind. Much will be effected by coaxing, whilst but little will be done by force, and the size, therefore, of the instrument chosen should be such as can be passed without giving much pain<sup>a</sup> to the patient, and such as he can retain for a considerable while, an hour at the very least. Much more will be gained at first by the introduction of a single instrument, every other day, for some time retained, than of a large one passed at longer intervals, and only for a brief period on each occasion. The term which is often employed in reference to these cases regarding the introduction of the bougie, that it is to be repeated as soon as the patient has *recovered* from its previous insertion, should be carefully expunged in practice. No introduction of a bougie should ever be permitted

<sup>a</sup> Uneasiness must be expected, and tolerated willingly.



to inflict an injury that requires to be recovered from. In passing the bougie, too, there is much to be gained both in effecting its introduction, and afterwards by the selection of a properly considered medicine for lubrication. Sweet oil is not to be employed if lard can be procured; but, in preference to either, the following ointment should be used:—Powdered opium,  $\frac{1}{2}$  a drachm; strong mercurial ointment, 1 drachm; cold cream,  $\frac{1}{2}$  an ounce; spermaceti ointment, 1 ounce.

This should be liberally smeared over the extremity of the guiding rod, and over the bougie itself, or, rather, so much of it as will be passed up into the bowel. The object of this combination is to afford to the mucous surface of the rectum the advantages which will be gained from the sedative and absorbent actions of the opium and mercury thus brought into direct contact with the diseased structures, and the uneasiness necessarily caused by the introduction of the bougie correspondingly lessened. The quantity of opium may be increased, but, from the large amount that will be carried in upon the bougie, it is as much as can at first be safely employed.

In other cases the ointment of belladonna, of the pharmacopœial strength, may be employed, but the opiate is that which I prefer.

The period for retaining the bougie in the stricture having expired, the next proceeding is to inject a stream of tepid water through its centre into the rectum above, the amount thrown up being regulated by the patient's feelings, repeating each successive quantity until the water returns clear and free from fæces, thus proving that the intestinal tube is free from lodgment. The injection of water may be followed by that of a small quantity of any astringent solution, which the surgeon, (according to the nature of the case) may wish to introduce into, and leave in, the cavity of the bowel. Thus, in some instances, the infusion of matico, made of double the ordinary strength, or in the proportion of one ounce of the leaves to eight ounces of boiling water, will answer well in tending to assist in contracting in the walls of the pouch-like cavity above the stricture; whilst in others, which are accompanied by much discharge of pus or muco-purulent matter, indicative of ulceration to a considerable degree, the nitrate of silver, increased from two grains to ten grains to the ounce, may be preferred; and, if the surface be inclined to bleed freely, of gallic acid, in the proportion of twenty grains to a wine-glass full of mucilage of gum-arabic. These several applications are to be injected in small quantities, that is to say, not exceeding a couple of ounces, and permitted to remain. By these means a stimulus

is given to the bowel, when unduly dilated, to contract, and to the ulcerated surface to heal in.

It may be asked, however, whether time might not be gained by combining the use of the bistoury with that of the bougie, by notching the stricture upon its internal margin. Such a line of procedure is applicable only to what may be designated as the *pack-thread* variety of the disease. Here it will be useful, and should be cautiously had recourse to; but, for the densely firm, continuous stricture, it is unsuited. Nothing is to be gained by making incisions into the sides of a stricture of this kind.

There is yet another point to be considered, and that is the treatment of those affections which so frequently coexist with the disease—I mean ulceration of the bowel above or below the stricture, and fistula in ano. Of the first of these I have already disposed by recommending the use of topical remedies by injection; of the second, we may say that the stricture of the rectum is the one object primarily to be considered, and until it is removed, and the integrity of the intestine restored, no treatment need be thought of, for, so long as the stricture exists, the fistula, although divided, will not heal. First let the stricture be removed; then, having opened a passage for the fæces, let the fistula be laid open *thoroughly* and throughout. To effect this properly, the patient should be placed under the influence of chloroform, and a bivalve speculum introduced; the rectum is next to be dilated so as to afford a full inspection of its interior, and the fistula should now be divided in its entire length, from the external opening to the inner, no matter where it be placed. If above the stricture, then the bistoury must be carried fully and fairly through it; and, if below, all intervening structures must be severed equally in the same manner, and dressed from the bottom in the ordinary way.

Now, in these cases there is always a risk of hemorrhage; from the depth of parts to be divided, and the enlarged state of the vessels; and thus it is that the employment of the speculum is so desirable in performing the operation. By its medium the surgeon is enabled to *see* the effect of his incision; to watch, as the knife cuts its way inwards, the effect of the division of the parts, and to note whether any vessel of size is wounded, and if, from the bubbling up of blood, he has occasion to anticipate serious hemorrhage, he must take steps to suppress it at once. No time should be lost, for individuals who are the subjects of stricture of the rectum and fistula in ano combined, will not bear any depletion whatever. Before resorting to the operation, therefore, the surgeon should be

prepared for this emergency, and have with him two or three pieces of wood, the size and strength of an ordinary drawing pencil, flattened at each extremity, and with a dossil of lint wound tightly round and secured. This should be dipped in solution of perchloride of iron, and pressure made upon the bleeding point until it cease, when a piece of ice the length of the finger, and about twice the dimensions, should be thrust up into the bowel, the divided fistula quickly dressed with lint from the bottom, and the speculum then, and not till then, removed. I need hardly say that in these cases the surgeon should, in private practice, always take the precaution of having an assistant with him, for it is impossible for any man, unaided, safely to keep up the effects of the choroform, and do all else that is required.

The measures here detailed include nearly all the points necessary to be considered in connexion with the local treatment of this distressing disease and its complications. Let us now turn to the general management of a patient suffering from stricture of the rectum, and other points to be regarded in connexion with the system at large.

These we may class under the following heads, viz.:—

1. Those measures which will alleviate suffering and afford sleep.

2. Those which will improve the conditions of the secretions, which are generally greatly depraved.

3. Those which will greatly increase the peristaltic action of the intestines, and lessen the disposition to scybalous formation.

4. Those calculated to support the general health, viz., diet, exercise, &c.

Now, as to opiates, they are to be deprecated as a general rule, and their habitual employment got rid of as quickly as possible. Often, however, we find the patient to have acquired the habit of taking a very large dose of morphia or opium, in some form, for the purpose of procuring rest at night, and it is very difficult to induce the individual to forego its use. In malignant cases, those affording no hope of recovery, every means calculated to lessen the misery of the patient should be resorted to; and if the individual finds temporary relief from narcotics, by all means let their use be persisted in, and to any degree whatsoever that may tend to reduce suffering and pain; but, in curable cases, opiates, I say, should be employed as little as possible, from their tendency to induce constipation. When ordered internally, I prefer their employment in the form of Dover's powder, given in combination with grey

powder, in very small doses; or, if administered by the rectum, as hard opium in suppository, or the ordinary tincture for injection. From opiate liniments and plaster rubbed into or applied over the parts in the vicinity, I have never seen any real benefit derived; but the former may be resorted to unhesitatingly, as to the fear of any ill consequences from constipation, in the cases of irritable patients, and may, perhaps, be useful as satisfying their wishes, and thus producing a calmative effect upon the individual.

From improvement of the condition of the secretions, and the production of a healthy action of the bowels, the utmost benefit will be derived, and the most unremitting attention must be paid to these points. For the first, the employment of tonics is almost in every case demanded, and especially in those succeeding to dysentery contracted in the tropics; for these cases the infusion of chiretta, suitably combined, will be found extremely useful, seeing that it has a tendency to relax rather than confine the bowels, and at the same time to favour the secretion of bile; whilst its febrifugal properties are calculated to meet any lurking disposition to ague still happening to remain in the system. Taraxacum, too, both in the form of extract and liquor, may be advantageously added to the chiretta, or employed alone. Cascarilla, calumba, and camomile, with many others, may be resorted to; but there is none that, for the cases mentioned, can be compared with chiretta. As an alterative aperient, and tonic, the following will be found generally useful, viz.:—Mercury and magnesia, 10 grains; powdered capsicum, 10 grains; pill of aloes, 20 grains; compound iron pill, 30 grains; glycerine, *q. s.*: divided into 20 pills; and two taken night and morning, or at bed-time only, as occasion may require.

But, with regard to the state of the bowels, whilst urging the necessity of the utmost attention being given to them, and to the regular evacuation of their contents so as to prevent accumulation, I cannot too strongly deprecate the habit which is sometimes adopted, of endeavouring to force the *fæces* out of the intestines by keeping up a continued purgation. No; the health and comfort of the patient will depend, and greatly depend, upon a point generally overlooked, viz., the keeping of the stools in a pultaceous state, neither allowing them to become hardened or too liquid; for, if scybalous, excessive agony will be experienced in the attempt at expulsion; and, if too thin, tenesmus will follow, with most painful scalding of the rectum. Now, these objects cannot be brought about except by great attention to diet, and to this I would, in the next



place, allude. The diet should be varied in kind, but *limited in quantity*. This is the great secret. The digestion in these cases is weak, and any matters passing undigested, decomposing in the alimentary canal, will give rise to distention of the bowels from flatulence, and occasion excessive uneasiness, if not absolute pain. The quantity of food, therefore, taken at each meal should be small. For breakfast, tea or chocolate, with honey and a little toast. In the middle of the day a sandwich; at four o'clock, fresh, roast, or boiled (but very tender) meat, with a few mouthfuls of well-cooked and tender vegetables; and at seven o'clock a little tea and toast again. This amount of food is ample for any one, if assimilated, and the hours specified would, I believe, be found, upon the long run, as those most suitable for the majority of cases. Fish, from the amount of excrement it produces, is not generally to be desired; but in this respect, and indeed, as regards the selection of food by adult patients, I am inclined to consult the appetite of the individual, for one person will digest an article under the stimulus of taste, and from it make healthy blood, that another could hardly be induced to swallow, and which his stomach would decidedly reject. As to dinner drink, for those who can afford it I recommend the use of *good* claret, either plain or diluted with a little water; but in many cases it is better for the individual to eschew fermented liquors altogether. In this respect, however, every case must be separately considered; no general rule can be applied to all. Special rules, as to clothing and exercise, can, however, be laid down for all. The first should, invariably, both for winter and summer, be warm. The dress may and should be light, but it must be warm. I know no disease, not even urinary fistula, in which the patient is more liable to suffer from cold, or to be more annoyed by frequent chills, than this; and during the shivering, the cutaneous action is arrested, and the internal organs and mucous tissues correspondingly congested. Light but warm woollen clothing should be worn, then, all the year round. As to exercise, it should either be carriage or in a boat, at least until the patient has recovered sufficiently to walk without experiencing pain in the pelvic region, and fatigue. Boating will, in general, be found by far the most agreeable to the patient; and for its enjoyment, at all seasons, coupled with salubrity of climate, I know of no place so suited to invalids of this class as the vicinity of the Cove of Cork. I recommend it in preference to all others.

The consequences of stricture of the rectum, then, being so serious; the tendency of this disease, when once established,

to progress, so sure; and the utter impossibility of its ever spontaneously subsiding, so certain—renders it an affection of all others most desirable to meet and treat at the commencement; because in its early stage it can be much more easily removed than when, from its presence, the secondary complications of fistula, distention, or ulceration, with various other complications, have ensued; and it is the duty of the surgeon to let no false modesty on the part of the patient, or delicacy on his, in the case of the sufferer being a female, prevent a proper examination being made in all cases where the symptoms point to organic obstruction of the gut. It is not merely in cases self-evident, such as fistula, polypus, or prolapse of the bowel, that an examination of the rectum should take place, and the condition of its cavity be ascertained, but in all cases of difficult defecation, or long-continued irregularity of the bowel, for the necessity of a correct knowledge as to the actual state of the rectum is as much needed by the surgeon for the right treatment of its diseases as of the vagina and os in uterine affections, and but little objection is ever made by the most sensitive female to such examination when its object and necessity are explained. The consequences of neglected stricture of the rectum, too, are far more distressing than those which succeed to the ordinary affections of the womb. What then, it may be inquired, are the symptoms which necessitate an investigation into the condition of the bowel? They may be thus summarily defined: dyspepsia, with occasional eructations; headache, and a foul gaseous taste in the morning; a constant feeling of fulness of the abdomen, with constipation or irregularity of the bowels; an unsatisfactory discharge of fæces after the use of aperients, and the return of the fluid, more or less, upon the administration of a lavement; pain in the loins and back, with irritation of the bladder and aching uneasiness in the testicles in the male, and bearing-down in the female. After a while, the discharge of mucus, of muco-purulent, purulent, or sanguineous fluid from the bowel, and the fæces in an unnatural condition, either scybalous, like sheep-dung, in small black pellets, or discharged in thin ribbon-shaped strips. All these symptoms, taken in combination, are certain signs of obstruction of the bowel, but all or each may exist in a modified degree, and when, under the ordinarily prescribed remedies, the symptoms do not yield, it is right in all cases to ascertain whether or no the existence of the cause is dependent upon contraction of the intestine, and, if so, to lose no time in trifling and palliation, but proceed at once to the removal of the disease, by restoring the continuity of bowel.

Of the consequences resulting from stricture, some are much more formidable than others. Thus the hypertrophy of the intestine above is rather useful than the reverse, by helping to force out the contents of the distended pouch, and pass them through the narrowed channel as soon as ever a passage by the bougie has been made; but the ulceration of the mucous membrane of this portion of the bowel is equally obnoxious. This cannot be too soon remedied, as fistula in its worst form, viz., that arising above the stricture, is ever prone to occur so long as the ulcerated surface exists; and these fistulæ,—although they do occasionally (as in the case of a preparation in the Museum of the Royal College of Surgeons in Ireland, presented by the late Mr. Colles) dissect, as it were, a new way for the fæces external to the stricture between it and the surrounding tissues, and open again into the cavity of the bowel below, yet such is an exceptional termination,—in the great majority of instances, when consequent upon the ulcerative action, will extend anteriorly, so as to form direct communication with the urinary bladder, and permit of the fæcal matter being transmitted into it; or else, burrowing through the loose cellular tissues around the rectum, make their way to the surface by the side of the anus or through the nates. The cul de sac, too, or pouch-like development of the rectum, when once it has formed, must continue to exist so long as the stricture which originally caused it remains; and the lodgment of the retained fæces in this pouch will of itself prevent the healing of ulcers, because the retained excrement has now become, as it were, a foreign body, and a direct irritant to the parts, so that reparative action is out of the question whilst it remains.

But of every affection, that which most demands a careful internal examination is fistula. Here, in very many cases (such, for instance, as the one now before us), the fistula alone attracts the attention of the patient. It was for it solely that this gentleman sought relief, and to it he attributed all his annoyances. It is true that contraction of the colon itself, or of the rectum very high up, may occasionally occur, but this is an exceptional case. As a general rule, the stricture is distinguishable by the touch, and, once ascertained to exist, and to be non-malignant in its character, steady and judicious perseverance in treatment local, constitutional, and dietetic, combined, will in almost every instance be successful, and restore the sufferer from a state of absolute misery to one of comfort and enjoyment of life. On the other hand, if this disease be left undetected, the patient must sink beneath the effects of gradually increasing irritation and constantly unremitting

pain; and for these several reasons, therefore, I repeat that in every instance where a suspicion exists as to the possibility of the symptoms complained of being dependent upon organic obstruction of the bowel, a full and careful examination should be made.

*Mode of using the Tubular Bougie.*—The forefinger of the left hand (previously oiled, and having the interstice under the nail well filled in with soap, as also the dorsum of the nail itself, in order to prevent the lodgment of fæcal or other matters) is to be passed up into the rectum, until its tip is firmly fixed in the stricture or against it, and the extent and density of the contraction thereby fully determined. The point of the thumb is then to be applied to the forefinger close up to the anus, and retained as the finger is withdrawn, thus taking an exact measurement of the distance of the stricture from the anus. The guiding-rod is next to be placed alongside of the finger, and an indentation made upon it with the nail of the right forefinger at the point corresponding to the extreme length previously inserted. This done, the surgeon must next make allowance for the extent of the stricture itself, and to this add a further plus amount of at least an inch for the passage of the rod beyond the stricture up into the cavity of the bowel. In this way an exact knowledge is gained of the length of guiding-rod required in order to secure a certain transit through the contracted portion of the intestine. A distinguishable mark is then to be placed upon the guiding-rod, by tying a piece of fine, but strong, white ligature silk tightly round it, which the elasticity of the gutta percha readily permits of being done, the bougie itself still passing freely over without displacing it. A similar mark is also to be tied round the bougie itself at such point as the surgeon may determine, according to the degree of distention which he may desire to exercise over the stricture. These distances, once noted, permanently remain, so that the preliminary steps here detailed are required only at the first examination.

In using the bougie, the left forefinger is to be introduced up to, and, if possible, into the stricture, and the guiding-rod, well lubricated for the anterior third of its extent, is to be passed along the finger until it reaches the contraction, when, manipulated by the right hand, it is to be entered into the stricture, and through it into the cavity of the intestine above, the requisite distance for its introduction being determined by the silk mark, which is to be left visible just external to the anus. The bougie (having been previously well smeared over with the opiate or belladonna ointment) is then to be placed



upon the projecting end of the guiding-rod, and slid along it through the stricture, its length of insertion into the rectum being determined by the silk mark fixed upon it. The guiding-rod is then to be withdrawn, and all pent-up pus, blood, fæcal contents, or air, allowed to escape through its centre. After the full period for the retention of the bougie in the bowel has been passed, plain or other injections, as desired, may be thrown up, and evacuated or not, at the discretion of the surgeon<sup>a</sup>.

<sup>a</sup> These instruments may be obtained at Robertson's, 22, Bachelor's-walk, and at Fannin and Co.'s, 41, Grafton-street, Dublin.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Three Memoirs on Iridectomy in certain forms of Iritis, Choroïditis, and Glaucoma.* By DR. A. VON GRAEFKE. Translated by Thomas Windsor, Esq. London: New Sydenham Society, Vol. V. 1859. 8vo, pp. 247 to 380.

*Report of (78) Iridectomy Operations (for Glaucoma) performed at the Royal London Ophthalmic Hospital, from May, 1857, to September, 1859, inclusive.* By DR. BADER. Ophthalmic Hospital Reports, Nos. IX. and X.

DISCOVERIES in medical science—consisting of a better appreciation of the true nature of disease, increased knowledge of the properties of medicine, or improvements in the art of treatment, either by medical or dietetic means or surgical operation—are, thank God! made from time to time. Like the facts and statements on which history is based, they, however, require time to test their merits, and establish their claims. For instances in point, either as means of cure, affording relief to human suffering and prolonging life, or for the removal of deformities, we may cite—the generous treatment of fever, the use of stimulants in certain diseases where formerly a lowering plan was observed, the general disuse of phlebotomy, the employment of mercury in inflammations of certain structures, the introduction of chloroform, the division of muscles, the cure of aneurism by compression, and possibly the resection of joints. These are, however, but portions of the wheat sifted from an immense mass of chaff—the chaff of cures not merely propounded for, but the virtues of which would be sworn to in the cure of *incurable* diseases, more particularly of cancer and consumption. We exclude from the consideration of this question the quack advertisers—the Morrisons and Holloways, who trade upon public gullibility with *one* article, knowing that, if properly and determinedly carried out, and with a sufficient investment in advertising, it will and must succeed.

Neither do we allude to hydropathy, homœopathy, mesmerism, clairvoyance, table-turning, spirit-rapping, Turkish baths, Odyle force, electro-biology, and all the other ologies great and small, from the days of Perkins' metallic tractors to the present hour, with which the public of all classes, but particularly those of the higher, choose either to gratify their own peculiar fancies, or to practise upon the credulity or sycophancy of others. Alas! for poor human nature,—disease, suffering, disappointment, despair, will grasp at a sunbeam, or cling to a shadow. The sufferer who seeks relief of the charlatan, when his fate has been pronounced by the legitimate practitioner, is to be pitied more than blamed. The reprehensible parties are the friends of the sufferer who permit, and the missionaries of the quack who spread the delusion. Of the quacks themselves who trade upon the weaknesses consequent upon suffering and disappointment, we have only to say, it is their trade, a gambling more than a commercial enterprise, and their motto is, *Vive la bagatelle!* They know the public will and must be gulled, and, like other sharpers, they see no reason why they should not prey upon the offered spoil. The public mind must be amused, and, while the masses are engrossed with war or politics, particular classes in certain localities find relief to certain innate promptings or cravings in outbursts of theomania, revivals, or miracles of any description, while the sickly and distempered eagerly rush after every novelty which offers. Most of these epidemics may be read in the "History of Popular Delusions;" yet neither are they the cases to which, in this paper, we wish to call attention.

Among the medical memorabilia of the last few years we find cures for incurable diseases, propounded by licensed practitioners, tested in public hospitals with the sanction and sometimes under the patronage of the heads of these institutions, occasionally even favoured by Government. Had we not a lamentable instance of this in our own city some years ago, when a *ci-devant* colonel and an assumed chemist were sent to this country, armed with governmental and authoritative recommendations to disinfect Ireland from fever, dysentery, and cholera—a portion of the great famine-plague which swept over this island from 1846 to 1852—because, forsooth, these charlatans were able to deodorize a water-closet, or correct the effluvia from a dunghill. In our Number for August, 1847, we then fearlessly exposed the humbug of these pretenders, and we flatter ourselves at having somewhat assisted in driving the weavers of the magic scarf from our shores, to try their nostrums in another land, where the head of the firm soon fell a victim to the disease he went to eradicate. We all

remember the story of the British Parliament granting a sum of money to a lady for having discovered a remedy for the stone. Not long since the French Government allocated a ward in the Hotel Dieu to a black doctor wherein to try his cancer-curing experiments; but, to the credit of the French nation, be it told, the trial has ended in the committal of the quack to prison.

The Dublin school has been particularly free from any delusion of this nature, or even that form of it in which the author deceives himself even more than the public, and always more than his brethren. More than half a century has elapsed since the world was told that cancer could be cured with carbonate of iron, or common rust. Since then we have not originated anything in that line, with the exception of a few miserable attempts by certain "nervous doctors," which were soon nipped in the bud by the interdiction of the licensing bodies to which they belonged. That the distinguished man who recommended the rust believed in his cures, no one will deny; but his brethren did not believe in them, though he assured all cavillers that his statements were "simple facts." So in the present day, when argument, reason, a reference to pathology, common sense, or experience, are tried in discussing the question of one of these cures, no matter how performed, the answer thrown in your teeth, along with a plentiful garnishing of epithets about "professional obstinacy, wedded to old opinions, incredulity," and so forth, is, "There is the simple fact; the patient is cured after the most eminent of the faculty had given the case up, sent the person away to die, and would not even give him the chance of an operation." Can we mend this by a diatribe? No; it has ever been and will be the same. All the public censor and critic can do is, now and then, to expose a glaring medical humbug. If any one inquire what good or harm these medical quackeries do, we answer, they are deceptions, proving either want of knowledge or want of honesty, or both, in their promoters. Yet there is money to be made of them, and that their upholders know full well. A cure for an heretofore incurable disease is promulgated—a book is written on the subject—the public press is invoked, and not in vain: without any attempt at dishonesty, or the slightest idea that they are gulled, an editor or two, influenced for humanity's sake by a philanthropic friend, is got to introduce a well-worded paragraph about the cure;—it is then public property, and, no matter how absurd or incredible it may appear, it is copied from periodical to periodical—it is cut out of newspapers, and sent in rose-coloured envelopes from one lady to another—and so the reputation is established, and patients with



anything at all resembling the disease flock in hundreds to the discoverer. It is true, he does not cure them—perhaps he does not know which are curable and which are not, for diagnosis does not come by instinct; he may not be, and in all probability is not, a pathologist; his panacea, or, if he is a knowing man, his remedies, are applied to all comers, and some get well, but not those affected with the “incurable disease.” The object, however, is attained—notoriety is achieved, patients are caught, and the remedy is only subsequently resorted to in special instances.

With incurable diseases affecting life, these nostrums have generally but a short duration; not so, however, in chronic or non-fatal diseases, more particularly those of the organs of sense. Not every one is an oculist or an aurist; the higher we rise in the ranks of medicine or surgery, the less its members meddle with cases appertaining to these branches, which are thus, on the principle of division of labour, left in the hands of specialists, who occupy a limited sphere, and, from their knowledge and experience, are the only persons in the profession really capable of appreciating novelty or testing truth in their respective lines. Thus the public are more easily gulled by cures proposed for deafness and blindness than any other ailments. A notable instance lately occurred in London, where many thousands a year were earned by pouring a solution of alum in urine into the ears of whoever was willing to pay for it. Look at the effect of the glycerine cure, which was also exposed many years ago in this Journal. Every one knows that it does not cure that for which it was vaunted, deafness; yet the apothecary daily compounds remedies prescribed by eminent physicians and surgeons for deafness, of which glycerine is the basis. If you ask some of these good men why they think of recommending that or any other such plan of treatment, you receive one or other of two answers—“Well, really I knew nothing better,” or “Statements have been made and cures related by honest and credible witnesses, who could have no object in stating what was not a fact; and on their evidence, although I have not seen a cure myself, I order it.”

There is another fallacy, and one of which the profession should be aware: fashions, no matter in what—in religion, politics, architecture, literature, farming, as well as dress—partake of the nature of epidemics. They have their early struggles against doubt, opposition, and previous tastes (facts have nothing to do in such matters); then their general acceptance, when everybody believes everything, where arguments are useless, and where, again, facts, no matter how patent, are not believed;—until the bubble bursts, or the froth goes down,

and no more is heard of the subject. So in medical fashions; it is only when the epidemic is on the wane that sane men are listened to, and the truth begins to appear.

Another mode in which the medical public is influenced in such matters is of modern introduction. Formerly, men wrote books, published essays in periodicals, delivered a series of lectures which were printed in medical newspapers, or recorded remarkable cases. Now, our weekly journals abound in reports collected, perhaps, by but moderately educated men, and even students, of what falls from a physician or surgeon as he passes from bed to bed, and of that desultory nature which is never intended for publication; with these are interlarded the skeleton reports of cases, the result of which never meets the public eye. We have reason to believe that these proceedings do more to depreciate than to elevate medical literature. We should not, however, allude to them here, but that they form part of the machinery by which new-fangled remedies are placed before the medical public—not before men, like ourselves, behind the scenes, or who are engaged upon the literature of the time; but the public, composed of the country and provincial practitioners, who have but little time to analyze critically such cases, and who, seeing that such and such a case under Mr. So-and-so “was greatly benefited,” is “considerably improved,” and “is doing as well as could be expected,” or is “rather better since last report” (no previous one having been published), is anxious to try the remedy on Mrs. So-and-so, whose symptoms correspond; or, if the remedy is beyond his reach, to send the patient to the metropolis for operation.

Do not the public find all this out? Many do not; and those who do, strongly recommend the use of steel traps to their brother foxes who may not yet have lost their tails. Nothing pleases a certain class of patients so much as to be talked about—to think that their disease is in any way peculiar. They are elevated from the martyr into the hero; they boast to you that the new doctor said, in the words of our own epigrammatic Brennan, that their case was

“The worst he ever saw—save one.”

Even although they are no better, they become the fast friends and most indefatigable missionaries for the new system and its professor. If you meet one of them, and ask is he really cured, the answer is, “Well, I can’t say I am much better; but that is because I did not go soon enough, or try the system long enough; circumstances prevented me remaining any longer under treatment,” &c., &c. These are not fancy sketches.

Who is there in extensive practice who has not encountered such people, and observed such conduct? The pertinacity with which the patient and his friends,—when they have thrown over the old family attendant, the kind, skilful, generous, judicious friend of years, for the quack, or for quackery of any description,—will try and persuade you that they are cured, would be amusing if it were not so lamentable. They will lose their temper with you if you hint that they are no better than they were, and attribute to the “well-known prejudices and illiberality of the profession” your reminding them of the opinion you gave some years before they had sent a lock of hair in a silk bag to a Madame or Mademoiselle to supply them with a pathological horoscope on the state of their liver or stomach.

These observations suggest themselves to us upon consideration of one of the last innovations in special medicine—iridectomy in glaucoma. It is right to tell our readers that the term iridectomy is simply the making of an artificial pupil, or enlarging a natural one by that method in which a portion of the iris is cut out, an operation first recommended by Reichenbach in 1767, and shortly afterwards performed by the elder Wenzel, and which is known in books under the name of corectomia or iridectomia. As employed by the modern iridectomists, it means making an aperture either in the cornea in front, or in the sclerotic behind the ciliary attachment of the iris, withdrawing a portion of that texture, and cutting off from a fifth to a third of its circumference; there is, therefore, nothing new in the operation, except, perhaps, the amount of iris removed.

The definition of glaucoma is not, however, so satisfactory; and, thanks to the scribes who have been engaged with the recent *glaucoma epidemic*, one hardly recognises it as the disease known to our forefathers as non-cerebral, but generally total amaurosis, with partially dilated pupil, insensible to light; colour of iris either natural or assuming a slaty hue; parts within the pupil of a sea-green muddiness, sometimes partaking of a bluish tint; congestion of globe manifested by turgescence of external veins; in some cases hardness of globe, but this is a very variable symptom. This disease occurs most frequently in aged people, and more commonly in females than in males; it first attacks one eye, and generally seizes on the other subsequently. That is what we know by glaucoma; coming on slowly, and being unattended with the manifestations of inflammation, it may be called chronic glaucoma. In process of time the lens frequently becomes opaque, with slight irregu-

larities of pupil; hence Tyrrell's definition of "glaucomatous cataract." The disease in this stage is generally painless. The term "acute glaucoma" has been applied to a peculiar form of arthritic internal inflammation of the eye, arising suddenly, attended with great pain and total loss of vision, and having its principal seat in the iris, choroid, and retina, without much effusion of lymph; pupil generally dilated, and loss of choroidal pigment frequently occurring during the progress of the disease. Like the former, it is nearly always fatal to vision.

In the foregoing description we have endeavoured, without too great minutiae, to be as simple, general, and, at the same time, as forcible as possible. Without entering into an archæological history of the disease, let us take up the writings of half a dozen good practical men, and see what their ideas have been upon the subject. When ophthalmic surgery made a burst about 130 years ago, glaucoma and cataract were considered synonymous, the seat of the latter not being then well determined. Shortly after Brisseau demonstrated the pathology of cataract, our own countryman, O'Halloran (whose labours we brought under the notice of our readers in vol. vi. of this Journal), wrote one of the best books on the subject of what was known in his day as the "glaucoma or cataract." The learned Mackenzie has reproduced in a concentrated form the opinions of most authors, ancient and modern; Dr. Hayes, of Philadelphia, in his edition of "Lawrence's Treatise on the Diseases of the Eye," published in 1847, has added some other authorities; while Himly brings together all the ideas of the continental writers upon the subject. The true pathology of the disease has not been very well made out. At first it was believed that there was a "scum" behind the pupil; then that the seat of the disease was in the vitreous humour, which became green; then it was supposed deposits took place in the vitreous body. Others, and with reason, attribute the greenish reflexion to the want of pigment in the choroid. Lastly, the ophthalmoscope has been brought into use, and finds a hollowed or cupped appearance in the entrance of the optic nerve, a peculiar condition of the retinal vessels within the limit of the papilla, and pulsation in the arterial trunks. Edward Jaeger first pointed out some of these peculiarities; but long before he wrote Mackenzie had noted a change in the retina, and in dissection found no trace of limbus luteus or foramen centrale. The matter stood nearly thus until about four years ago, when Dr. A. von Graefe, of Berlin, published some essays upon the subject in the *Archiv für Ophthalmologie* wherein he attributed to intra-ocular pressure the condition of the optic



nerve, the hardness of the globe, and also, by producing paralysis of the nerves supplying the iris, the dilatation of the pupil. That there is increased secretion of both aqueous and vitreous fluid in certain diseases of the eye, all will admit; and that this increased bulk within the globe must, by pressure, affect the retina and choroid, no one can deny; but whether it was the original cause of the alteration in the optic nerve, in either acute or chronic glaucoma, has not been proved.

That the evacuation of the aqueous fluid, and possibly some of the vitreous with it, will give prompt relief in certain forms of internal inflammation of the eye, every ophthalmic surgeon is well aware. There is nothing new in that procedure. The broad needle, introduced through the cornea, and given a slight turn, so as to evacuate the aqueous fluid, will give immediate relief to sufferers, and in an incredibly short time restore the brilliancy and transparency of a cornea that had already become gray, and was fast hastening to destruction. Many a case of extraction we have known to be saved by separating a portion of the section when inflammatory action had set in. Fifty years ago Ware and Wardrop recommended and practised the evacuation of the aqueous fluid in corneitis and aquo-capsulitis. Shortly before his death Mr. Dalrymple held the opinion that certain cases of amaurosis, attended with choroidal complication, might be relieved by inserting a broad needle obliquely into the eye, in the hope of lessening the bulk of a fluid which he thought existed between the sclerotic and choroid, and pressed the latter on the retina. With this intention he operated ineffectually two or three times on Mr. M., of this city, whose case was recorded in this Journal many years ago. Every one who has to treat cases of staphyloma knows that immediate relief is afforded by tapping the projection, as recommended in this Journal for February, 1847.

But then, we are told it is not the mere letting out of the vitreous or aqueous fluid, but the cutting out of a portion of iris, that relieves the pressure and effects the good. We are stupid enough not to see this in the same light as our neighbours. No doubt, a wound made for the removal of a portion of iris, even if none of that membrane remains in it, will not close so accurately nor heal so quickly, as a puncture made by a broad needle; but if the pupil is free, the iris cannot by its presence or its bulk exercise any pressure on the optic nerve. We are, however, entering upon the discussion of a subject the advocates of which answer us by an appeal to facts—the published records of the cases, with the number of cures, and, therefore, there is no need to argue the question.

There never was, perhaps, any theory or operation taken up so quickly, spread so widely, or upheld so firmly, as the cure for glaucoma; certainly, none since Stromeyer's recommendation, and Dieffenbach's operation, for the cure of strabismus, with, perhaps, the exception of cutting a wedge-shaped piece out of the dorsum of the tongue for the cure of stammering—another Berlin discovery. Before we come to the question of the general utility of iridectomy in glaucoma, even if successful, it is worth inquiring how the epidemic spread so rapidly. We believe the answer is chiefly to be found in the man. Graefe, son or grandson of the celebrated baron distinguished in Prussian surgery, one of the tribe of prophets, the natural heroes of idol-worship who ever collect disciples, and always inspire them, while others only teach; young, handsome, long-haired, dark-eyed, clever, kind, hospitable, winning, the word of such a man is law; his knowledge is great power; his opinions are regarded as revelations; his statements are never questioned. Such a man was Liston—noble, generous, commanding, as well as able. We could include in our list some of our brethren of the British isles, men of high faculties, originative, discursive, insinuating, bold,—were such a course warrantable in a review. Minor prophets there are, chiefly of the bullying class—prophets to their patients, not of the sympathetic variety, but men who rudely command and obtain a servile obedience. Neither the profession nor the public are aware of how many Rareys there are in the world besides the horse-tamer. Not quite twenty years ago, an English watering-place rose into high repute, owing to the tact, knowledge of human nature, and eccentricity of a "walking doctor." Well, the pupils of Graefe took up the glaucoma, and carried the precious bantling to London, where it specially throve in the Moorfields Hospital, the scene of the labours of Saunders, Farre, Travers, Lawrence, Tyrrell, Dalrymple; and from thence we heard through the pages of the weekly London press, and of the special periodical appertaining to that Institution, of the operations performed, and the cures effected in cases of chronic and acute glaucoma. Slight discussions, it is true, arose among the new sect respecting the pathology of the affection and the mode of cure, as well as the method of operating; but all were agreed as to the general utility of Von Graefe's treatment. True it is that no man of any mark in London, either special or general surgeon, came forward, and in lecture, essay, or book, fearlessly stated his opinion and related the cases in which, either in acute or chronic glaucoma, he had by iridectomy restored the lost sense. No; the epidemic spread by more subtle means;

the disciples of the prophet or the votaries of the system wrote it up and produced the excitement, while, with few exceptions, the operators themselves put forth nothing under their hand and seal. It was considered ignorant and prejudiced, absolutely offensive, in this country to question the propriety of the operation, or the statements as to the results. The proverbial slowness of the Irish school of medicine to accept new truths was thrown in our teeth; and half-caste doctors, after finding that iridectomy for glaucoma was not performed either at the City of Dublin or St. Mark's Hospital, went about saying that the Dublin Ophthalmic School was the lowest in Europe.

What benefit arose from all this? A very manifest one; the New Sydenham Society, in its last volume, published Von Graefe's three memoirs on Iridectomy which form the subject of the present review. Was not that a benefit to the members of a society, who, for neither love nor money, could procure a copy of that fine old work, John Woolhouse's treatises on the Eye, or Bannister's book, and other essays on the diseases of the organ of sight which we might refer to!

When the novelty was fresh, our statistical notions of ophthalmic diseases were a little perturbed at hearing of the number of cases of glaucoma which were operated on. We thought the disease a rare one, in any of its forms, but especially in the chronic. On looking over the patients in general or special hospitals, in passing through workhouses, and inquiring into the pathology of inmates of blind asylums, or examining into the published tables from ophthalmic hospitals, we find the disease to be a rare one. Well, as we looked more narrowly into the records of the new cases, we found they were not cases of glaucoma at all—certainly not according to the standard laid down by the best authors, and accepted by the most practical teachers. The young gentlemen who were twaddling (if we may use the expression, and they will agree with us in its applicability ten years hence) on this subject were evidently, but indifferently educated, we mean as oculists, and were writing about what they did not understand, employing a jargon of which they scarcely knew the meaning, and doing but indifferent justice to themselves, the subject, or the operators they were reporting. If questioned, they referred to the opinions of the prophet, and, like the microscopists a few years ago, they ignored the *tactus eruditus* of the old experienced surgeon, and boldly referred you in confirmation of their views to the established diagnostic results of the ophthalmoscope. Cases of amaurosis, no matter from what cause, and all the results of

arthritic or other internal inflammations of the eye, were jumbled together in the most charming confusion by those ephemeral pathologists; every disease was called glaucoma; and we saw several cases in which iridectomy had been performed, where the amaurosis was produced by floating retina; and also where there were closed pupil and green iris bulging into the anterior chamber from oft-repeated and long continued choroido-iritis—which no good surgeon would have thought of meddling with. On the other hand, we have reason to know that Graefe has operated for iridectomy in cases of impaired vision, when the patient could absolutely see to read moderate-sized print.

While all this was proceeding, was there no voice raised against it? Yes; for the honour of our school be it told, the "Dublin Medical Press," edited by a venerable ophthalmic practitioner, at once, and in the terms, and with the pyrexile energy peculiar to that publication, did openly and fearlessly denounce the glaucoma dodge (see the number for February 10, 1858), and from time to time since has exposed the delusion. Nevertheless, it still has its votaries; and others are beginning to claim credit for priority in the glaucoma cure. Mr. Middlemore recommended the evacuation of a portion of the contents of the globe, through an opening into the sclerotic, nearly thirty years ago; and Mr. Critchett, one of the able surgeons of the Moorfields Hospital, had performed iridectomy so early as 1854 (see his lecture in the "Lancet" for September 9 of that year, and his practical essay on the treatment of acute glaucoma, published in the Ophthalmic Hospital Reports for January, 1858). But neither of these, nor any of the other practitioners we have mentioned, were prophets, and so failed to acquire the celebrity due to this great discovery. So convinced were the editors of some English periodicals of the great value of the Graefean operation, that we knew an instance in which a London journal absolutely refused to insert a communication criticising the so-called cures of glaucoma, even after the paper had been in type.

As yet we have not had any *cures* recorded in this country, and therefore, when requested by the editor of this Journal to write a review of the subject, we had collected a series of cases recorded in England, for the purpose of analysis; but we are saved the trouble, for in the last number of the "Ophthalmic Hospital Reports" the murder is out, and Dr. Bader presents us with a resumé of 55 cases, in which 84 (not 78) eyes were operated on; and in a table attached to his Report the following results are acknowledged:—19 were cases of chronic, 20 of subacute, and 16 of acute glaucoma. The statistical



table is peculiar, and differs from most documents of its kind in not giving either the age or sex of the patients. In 29 persons both eyes were affected; in 18 the right, and in 8 the left eye only was affected. In the second column is registered "how long before iridectomy began to use convex glasses;" the object is not stated, but it is remarkable that only 7 of these cases had not used spectacles. From the entry in this column of persons having worn glasses for 10, 20, 25, 30, 40, and even 51 years, we learn that most of these patients had been more or less presbyopic. It also gives us some inkling as to their probable ages.

The two last columns present us with the amount of "vision immediately before iridectomy," and the result, "generally the second or third week after" the operation.

In one case it is magnanimously acknowledged that a patient who had only "perception of light and of shadows" was "hardly as good as before" the operation. In 32 operations the eyes remained "as before." So runs the record; but whether any of these suppurated, softened, collapsed, or enlarged, and were rendered unsightly, is kept, like the cases themselves, *out of sight*. In not one instance of chronic glaucoma was vision restored. In what is called subacute glaucoma, 3 of the recorded cures could "read large type" before; and after the operation could read "average type;" but, whether with or without glasses, is not specified. In acute glaucoma (symptoms not given, but may be set down as those of general internal non-suppurative inflammation of the eyeball—probably rheumatic or gouty—a disease in which paracentesis has long been employed), we read of the greatest amount of success. Five eyes would appear to have been benefited so far as to read, but whether the improvement remained after the third week, is not stated. In one of subacute disease, it is thus recorded before the operation, "can see (not to read) large letters;" and after the operation, "reads large letters, and tells the time on a distant clock." In the first case of acute glaucoma operated on, the eleventh day of the inflammation the patient had a "fair perception of shadows," and afterwards could read "average type;" but what description of type the reporter means by average is not mentioned, which, now that ophthalmologists have begun to state distinctly what kind of type they refer to, whether brier, primer, pica, &c., is to be regretted. In No. 2 the person could "recognise small objects, such as keys." No. 3 had "perception of light and shadows." No. 4 could "count figures;" and in No. 5 it is acknowledged vision was returning, and the patient had "perception of large objects." Whether

these five cases, if treated in the ordinary way either by depletion, mercury, bark, potash, counter-irritants, or even ammonia and stimulants, might not have regained a similar amount of vision, is a question worth consideration. Are there not lots of cases treated daily by surgeons, both of specific and non-specific internal ophthalmia, where the patients, during the violence of the attack, lose vision altogether, and are subsequently able to read even small type?

But, we may be asked,—although many patients in Dr. Bader's schedule were not restored to anything like useful vision, were they not greatly benefited? Yes; this is said to have been achieved; persons who had "perception of shadows" were made to have a "perception of light;" and some who had only the "faintest perception of light" were, by a removal of a portion of iris, made to see "fair perception of shadows." This we acknowledge;—mighty achievement of ophthalmic surgery! Again, those who had a "faint perception of shadows" were enabled to "recognise the hand;" but whose hand—their own or the surgeon's—is not stated.

Again, we are gravely informed that in a case of chronic glaucoma, with gradual loss of vision coming on for seven years, the person had "perception of shadows," and by operation obtained "faint perception of light." How a man is to perceive shadows, who does not perceive light, Dr. Bader does not explain. Now, on this subject we have a word of warning for our juniors. Blind people have a phraseology peculiar to themselves: for instance, "Can you perceive light?" The answer is, "Oh! yes; I can count the bars in the window;" although the poor sufferer really does not know where the window is. "Can you see any object?" The reply is, "I can see and count my fingers, and tell the colour of my skin," holding up the hand. "Well," says the surgeon, "touch my finger;" not a bit of it; he does not even know on which side the hand of the surgeon is. Furthermore, it must be a very badly disorganized eye indeed, that is not conscious of the hand or any dark object passed before it. Such cases are daily presented to the ophthalmic surgeon, who never dreams of operating on them. Poor, dark people craving for a ray of light will try and persuade the surgeon that they have sufficient sight to warrant the performance of an operation, and this every man of experience knows full well.

Dr. Bader deserves credit for the publication of this table, and fairly acknowledges that "those cases which were complicated with chronic iritis, or in which escape of vitreous, &c., followed the operation, are not included in the present Report."

But valuable and honest, though late, as this admission is, it was scarcely needed, for, more than fifteen months ago, and during the very height of the epidemic, Mr. Dixon, senior surgeon to the London Ophthalmic Hospital, and a thoroughly honest, practical man—whose cases, by the way, were vaunted as cures two years ago—has thus written in the last edition of his valuable “Guide to the Practical Study of Diseases of the Eye:” “The announcement that a simple and easy operation could arrest or cure a hitherto uncontrollable disease was sure to attract attention, . . . . was published by Graefe in the German Ophthalmic Journal, and was also brought before the Ophthalmological Congress which met at Brussels in 1857. When the nature of the operation came to be explained, one could not fail to be struck with the apparent absence of all casual connexion between the morbid changes of glaucoma and the means proposed for arresting them. How was general hyperæmia of an eyeball, and the consequent changes of its tissues, to be overcome by cutting out a piece of the iris? No satisfactory explanation as to the *rationale* was offered. We were told that ‘*intra-ocular pressure*’ was the cause of all the phenomena of glaucoma, without any very clear account being given as to what was pressed, or what effected the pressure; and we were assured that the removal of a piece of iris by taking off the pressure would bring about restoration of sight.

“The facility with which the operation of iridectomy, as it has been called, can be performed, has led to its being practised in an immense number of cases; and were we contented with the array of so-called cures which have resulted, we should indeed believe that glaucoma, hitherto so hopeless a disease, had been brought as much under control as cataract itself; but a careful criticism will convince us that many of the ‘cases of acute glaucoma, cured by operation,’ were simply cases of acute inflammation of the sclerotic, implicating to a slight extent the iris and cornea, and attended with severe neuralgia and impairment of vision,—cases which would have yielded to judicious treatment, if no *iridectomy* had been performed. A few cases, supposed to be chronic glaucoma, were probably nuclear cataract in an early stage, and the removal of a portion of iris, by exposing the still transparent periphery of the lens, improved (of course, only temporarily) the patient’s sight. Of other instances which have come under my own observation, where the operation has been unsuitably performed or proposed, I forbear to speak.” Mr. Dixon adds:—“For myself, I may state that, although I could not recognise as sound the theory upon which the operation was brought forward as a cure for glau-

coma, I tried it in a series of carefully selected and well-marked cases of the following forms of disease:—‘ Amaurosis with excavated optic nerve,’ as Graefe has termed a peculiar morbid condition; chronic glaucoma, where the lens had not yet lost its transparency; and in cases of acute glaucoma, characterized by sudden impairment of sight, rapidly followed by inflammation of the eyeball, dilated and fixed pupil, severe neuralgia, and total loss of vision. In neither of the first two classes did I find, nor had I expected to find, any improvement to result. Nor in the third class was sight restored; but the inflammation seemed to be arrested, and the neuralgia was either very much lessened or it wholly ceased. I cannot, however, attribute this result to the removal of a portion of iris, but mainly to the evacuation of the aqueous humour through the large corneal wound.” Such is the matured opinion of one of the men who performed several of the operations referred to in Dr. Bader’s Report.

Another peculiar psychological phase of eye disease is that in which the patients occasionally exaggerate their defects, and will not acknowledge the amount of vision they possess; unhopeful, dispirited, and desponding by nature, they put but little faith in Providence, the doctor, or themselves, and, with a morbid craving for sympathy, engrafted on innate selfishness, they become ophthalmic dyspeptics. If such persons are surrounded by weak friends, they become confirmed valetudinarians. They can talk of nothing but their ailments; they gravely, and without appearing to be conscious of the misstatements they are making, tell you they are quite blind—in total darkness—can do nothing; yet, if watched narrowly, their acts belie their words. If the practitioner rises to leave, and says, “As you can’t see at all, I cannot be of any use to you,” they will soon turn round and display an extraordinary amount of vision. In other instances it may be necessary to produce this admission by a more round-about way, and, adroitly taking them off their guard, bring them on to see this and that object, and, in fact, to make themselves disprove their statement. This is not always a very gracious task, especially if obliged to be performed in the presence of watchful friends, willing to side with the patient. We know of a case in point, in which such a scene took place about a year since. A lady, aged 64, residing in Dublin, had, while staying in the country, an attack of rheumatic iritis, many years ago. The choroid was in all probability affected, as the loss of sight could not be accounted for by the amount of mechanical impediment present; in both eyes there was some attachment of the iris; a slight tag in the



right, but considerable adhesion of the pupillary margin of the left, with whitish opacity of the lens capsule; the ordinary posterior synechia, and partially closed pupil. Such was her state when seen by some practitioners in this city after the subsidence of the attack, and such, we believe, is more or less her present condition. The use of atropia, such internal remedies as improved her general health, and an occasional chat with some of her medical attendants, got this lady over many years, able to help herself in all respects, although now and then getting a fit of despondency, and complaining that she was blind. A few years ago her defect of vision became increased by incipient cataract in her good eye; opacity of the lens of the usual greenish-amber hue common to such cases. She was then promised that, if she lost her power of recognising objects and finding her way, an operation for removal of the cataract would, if she wished, be performed; but that, so long as she "did not knock her face against the wall," an operation would not be justifiable in a diseased eye like hers. With respect to the other eye, the most which could be done would be to form an artificial pupil by detachment of the ciliary edge of the iris on the nasal side—an operation which those who have observed the practice in St. Mark's Hospital for some years past must have seen frequently performed, and often with success. The amount of vision which may be obtained by such a procedure, let it be ever so successful mechanically, can never be predicted. It depends, not on the dexterity of the operator, but on the state of the lens, choroid, and retina behind the newly-made aperture; and where patients can find their way, cut their meat, and know their friends with one eye, it is scarcely justifiable to subject them to an operation on the other, with more than the ordinary chances of inflammatory action being set up. Such was this lady's state when the two great ophthalmic wonders of the age—the ophthalmoscope and the glaucoma cure—were presented to her. It would be contrary to the tenor of the human mind, especially in such persons, to forego the chance of relief held out to them. In such a case it is right to observe, the ophthalmoscope tells us nothing; there are sufficient outward and visible signs for the surgeon to form an accurate diagnosis; and the only object which could be achieved by an ophthalmoscopic examination—that of learning the precise state of the vitreous body and retina—must be nugatory where the lens itself is opaque.

Friends objecting to the new operation, a consultation between Dr. Adams, Dr. Wilde, and her family attendant, Mr. Munn, was called. The poor lady, anxious to make the worst

of her case, in the hope of having the operation performed, sat on a sofa and declared herself in darkness—unable to see anybody, or anything, or to know one colour from another—not able even to find her way up stairs, &c. Well, after some little tact on the part of the medical men, her spirits revived, and vision came to her so far as to be able to get up and walk directly to the door and put her hand on the handle—then to see the faces of her friends—afterwards to point out every tint and shade of colour upon a parcel of worsted-work doylies which happened to be presented to her in succession. Then Dr. Adams, taking her to the window, got her to admit that she saw persons passing on the opposite side of the street, and could observe the brass plate and knocker on the opposite house—the street being a wide one. Curious to relate, Dr. Adams, who is in the habit of noting his cases, made a memorandum of this circumstance, and his letter to that effect is now before us. But that was not all: the lady was questioned as to her ability of cutting her meat and feeding herself, and, confessing to a partiality for corned beef which she ate the day before, was rather indignant at being asked whether she ever missed the mustard on her plate. All this occurred in the presence of the lady's relatives who were rejoiced to find that matters were not so bad as they anticipated. The united opinion and advice of the medical men present (and in the latter her son concurred), was this—that she might have an operation performed on her “bad” eye if she liked, but, as any real, substantial, permanent benefit was not likely to accrue from it, they themselves declined operating, so long as she could, with either eye, make those observations detailed above. Well now, that lady has been operated upon—who has not heard of it—who, within the city of Dublin, has not been told of the wonders performed by the new German operation on Mrs. —? Is not her cure written in one of the books of the prophets—has not her case been recorded in one of our periodicals? We have no desire to criticize too severely that record, nor to compare its incongruities, because it is possible that some natural and forgivable deception may have been practised on the operator. What has been the result? That the lady was, in time, able to count “her fingers at a distance of *six* feet from her.” Charitably supposing that this is not a slip of the pen, but that she saw her own hand in a looking-glass, why could not the simple test be recorded of the patient walking over from a distance of six feet, and touching the point of another person's finger with her own? The right eye was then operated on, and it is said that she was thereby enabled to “distinguish the colour of ribbons at a dis-

tance of two feet from her"—just as she did the tints of the doylies this time twelve months; and she has informed the operator that she had occasionally "perceived her daughter perfectly, threading a needle at a distance of two yards." Why, again, should these tests, depending upon what a patient tells that she has done in the absence of the surgeon, be adduced, instead of what she absolutely can do in his presence? If this good lady is cured, or even considerably benefited by having a piece of iris cut away, and thus allowing more light to pass in through the thin edge of a partially opaque lens, we rejoice to hear it, and so, we think, will our readers; and we sincerely hope she will go on improving. There never was a greater mistake made by some narrow-minded people than supposing that honourable physicians, or surgeons, are sorry to hear that their former patients, upon whose cases they had (perhaps erroneously) given an unfavourable prognosis, have been cured, or even benefited.

The case of this lady is stated to be one of glaucoma. It certainly was not so originally, and the only thing *glaucomatous*, which we can perceive in it now, is the operation.

Among the curious effects to which the votaries of a medical epidemic are liable is an obtuseness respecting figures, and a hyperbolical phraseology in speaking upon the subject, which they would not employ under other circumstances. The statistical method of testing treatment, though liable to many of what the mathematicians call "disturbing causes"—in plain English, exceptions and fallacies,—is nevertheless valuable; but it seems, however, to be thrown overboard by the iridectomists. Dr. Bader heads his paper with a "Report of seventy-eight iridectomy operations for glaucoma, performed at the Royal London Ophthalmic Hospital, from May, 1857, to September, 1859, inclusive;" but for the life of us, and we have counted the table over and over, we cannot make it agree with this statement, for undoubtedly eighty-four eyes were operated on. The "Medical Press," in its number for May 2, 1860, perhaps from not counting the cases, falls into the same mistake when saying: "Those who have been hearing the boastings of those who are turning this matter to account will scarcely believe us when we tell them that in these seventy-eight cases there is not a single one of complete cure, and very few even of amendment;"—but this is not all, for Dr. Hildige, in an article on the subject of Iridectomy in Glaucoma, which appeared in the Dublin Hospital Gazette for 15th May last, writes as follows:—"According to the London Ophthalmic Hospital Reports, the operation for iridectomy for the cure of glaucoma was

performed on 107 eyes, from May, 1857, to September, 1859, inclusive. Of these, eighty cases were benefited by the operation, a fact which speaks volumes in its favour." How the figures in the foregoing statement are made out, we are at a loss to divine; and, with respect to the benefit achieved, it is really difficult for a reviewer to answer a worthy man and a respectable practitioner without being uncourteous.

It would seem, however, that the Report published by Dr. Bader was first written, and the table which should have been the basis thereof was compiled afterwards; certainly the incongruities between the two can only be explained in this manner. The first portion of Dr. Bader's Report appeared in No. 9, published in October last, and the conclusion containing the table which we have analyzed, and which bears no date, came out, we believe, in the end of April. In that first portion, an analysis is given of some seventy-eight cases, but they do not seem to form any part of, nor can they under any single heading, or by any stretch of statistical ingenuity, be made to agree with the table published as a continuation and conclusion of the same paper in No. 10. The jumble has been so complete that it should have been referred to the Statistical Congress. Certainly we can make nothing of it. But, though we cannot offer any explanation of the figures, we can supply our readers with a few trifling incidents related in the letter-press description of the reporter from the London Ophthalmic Hospital. In chronic glaucoma, "when *blind* for some time, it is not expected to regain sight; [and] a chronic glaucomatous eye with mere perception of light is *rarely* improved by the operation; but generally the pain and the progress towards blindness is (*sic*) arrested;" so that, although sight cannot be regained, to prevent mere perception of light being lost, a severe and, to the eye frequently fatal, operation is recommended. Hemorrhage, it seems, was not an unfrequent occurrence, and must have increased the intra-ocular pressure not a little—possibly upon the homeopathic principle of *similia similibus curantur*. We are not, it is true, told how many cases of hemorrhage occurred; but as such eyes may, we believe, be found in certain museums, where they are the pride of the curators, although possibly regretted by their original owners, and a source of unquiet recollection to the operators, they have advanced pathological anatomy; yet some may consider them a disgrace to operative surgery.

"In several of these cases of hemorrhage," writes Dr. Bader, "in which *the eye had been removed* after the escape of the vitreous, it was found that the blood was extravasated from the large vessels of the choroid, had displaced the choroid and



retina inwards, and *pressed the other contents of the eye* through the corneal section"!! That certainly was intra-ocular pressure with a vengeance, where the result of the new operation was to squeeze out "the other contents of the eye." It is mentioned incidentally that in many of these cases there was a "rotten state of the conjunctiva;" in general practice, we know surgeons do not usually operate where there is a rotten state of the skin. Slight and simple, as we were at first informed, was the operation of iridectomy, and as we have described it above, still there must have been occasionally great violence employed, for we read that, "in drawing down the eye with a forceps, for the purpose of fixing, it appeared in several cases to have caused rupture of the suspensory ligament and escape of the vitreous," &c. Now it very seldom occurs in extraction, unless where the vitreous is fluid, that the whole of that body is lost; there must, therefore, have been a very extensive opening made to relieve intra-ocular pressure in these cases.

As already mentioned, it is acknowledged that in several of these cases the conjunctiva was rotten; but furthermore, we are told that great care must be "taken, when seizing the iris, not to touch the lens or suspensory ligament, for the iris, being atrophied and *rotten*, is easily perforated by an instrument." Now that there are rotten irides—the term is a good one, we often employ it ourselves—we must admit; but that any surgeon of five years' standing would operate on eyes in which he knew the conjunctiva without, and the iris within, to be rotten, is certainly a more heroic proceeding than we ever knew to occur in this country.

Let us end this disgusting detail with one or two other extracts and statements. Occasionally the lens in its capsule "presented in the section, and six hours after the operation was found with about a third of the vitreous humour (of abnormal consistence) at the side of the patient." Again, "the opaque lens of several of the above cases was extracted with a favourable result." What this favourable result was, Dr. Bader has not stated, and we are unable to discover any record of the fact in the statistical table. "One case presented all the fatal accidents of the operation; first, some difficulty in seizing the iris, then escape of some vitreous, then of the lens, then of a large portion of vitreous, with the hyaloid fossa [?] attached to it; then of the remainder of the vitreous, followed by about half an ounce of blood." We presume it was the following sentence induced Dr. Hildige not to count over the cures given in the table to which we have so frequently referred: "Antici-

pating [by about half a year] the analysis of the cases successfully operated upon," states Dr. Bader, "it may be said that in about eighty cases the operation has had a favourable and, so far, a lasting result;" lasting, certainly so far as ever seeing again is concerned, but we are not quite sure that they are likely to last in the same quiescent condition they were in before iridectomy was performed. That iridectomy does not cure the intra-ocular pressure is let out where the reporter says: "A second portion of iris was excised in two cases, and the distended section (new increase of intra-ocular pressure) was punctured in two others."

We think it not unlikely that our readers have, ere this, said to themselves: this is not a review of Graefe's paper, but of the record of the operations performed in England upon his principle. Such is, we acknowledge, to a certain extent true. Graefe's doctrines, as published by the Sydenham Society, are plausible; but in a practical science of this nature we require something more than doctrines; cases must be given, and Graefe was wiser than his countryman of the London Ophthalmic Hospital, and kept his cat in his bag. Furthermore, we have no objection to the country of Hahneemann, Preissnitz, and De Loev, having also the honour of inventing the new cure for glaucoma; our object is to arrest the spread of the epidemic in England.

It has been constantly asked, even by those who should know better, what harm do these operations do;—patients are blind, and cannot be made worse; surely, it may be tried. Such questions come badly from the Dublin school of pathology. They do harm by bringing operative surgery into disrepute; most of our hospital surgeons are also public teachers, the guardians of medical literature, and should remember that, although they may not risk the patient's eye or his life, they do risk their own credit and that of the art of which they are the ministers. Would such practitioners operate for stone in cases of diseased bladder or kidneys, or upon arteries in persons with diseased hearts, or remove the local exhibition of cancer while the system is permeated by that virus, or amputate limbs where fatal disease exists in the viscera? Was it not prophetic, and, perhaps, intended for some of those persons we have alluded to in the foregoing, that, more than half a century ago, Beer, the father of German ophthalmic surgery, wrote in his *Lehre von den Augenheilkunde*,—"glaucoma and cataracta viridis, being both the results of inflammation of the eye, must be classed amongst the incurable diseases, because always associated with a great amount of general varicosity of the blood-

vessels of the eye. This cataract readily entices inexperienced physicians, and fond of operating, to the most mischievous interference with the organization of the eye."

There will always be found a certain class of men not quite confident in themselves—not thoroughly permeated with the principles of their art, who are ever willing to adopt novelty, and thus show the public that they are conversant with the newest improvements in science. Upon this subject Professor Forget has written as follows:—

"We are daily told 'that when a new remedy appears, the first duty of the practitioner is to believe in it; that he has no right to doubt the intelligence or the good faith of the inventor; that the first thing to do is to try it,' &c., &c. Now, this is all flagrant absurdity, not to say hypocrisy. Such false principles have been introduced by people who have an interest in being on good terms with everybody, and who find their account in parading new remedies. The truth is the very reverse of this. We ought to wait for the proof before exposing ourselves to new deceptions. There are always plenty of persons ready enough to try the new thing. The wise man will abstain before incurring a danger. Your embarrassment will be great enough if you fall into the snare. New remedies rise up in such quick succession, that you will scarcely have done with one before another turns up. If you find a good one, soon you will be offered a better, and you will end your days in hunting after remedies, having all your life played the part of a dupe, and leaving behind you the remembrance of a superficial and versatile practitioner, without having any settled convictions. The practitioner, therefore, is not obliged to experiment with new remedies. The rule has been invented by *intrigants*, for the purpose of getting themselves spoken of."

Young surgeons do not get cases of white swelling, or aneurisms, or stone in the bladder, to operate on every day, and in the present energetic times of competitive examination and volunteer movements, they have betaken themselves to doctoring eyes. We say, proceed and prosper; there is plenty of room for all; and, alas! but too wide a field for ophthalmic practice in this country. Already two new ophthalmic dispensaries have been opened in our city, and we are sure that no one will regret new outlets being opened for those poor people who go the round of doctors and institutions, receiving care and attention at such establishments. We have only one word more to add—there are plenty of curable cases of ophthalmic diseases which but too often go wrong, or require such a length of treatment, that both patients and practitioners mutually tire of each

other. If, then, the young school of ophthalmic surgeons would turn their attention in this direction, and find out a more expeditious and certain cure for granular lids, or a means of keeping the pupil dilated during the progress of a severe internal ophthalmia, or of lessening the chance of inflammation and its results, even after the best performed operations for cataract, &c., instead of plunging into the globe, pulling out the iris, and cutting off a portion of it in disorganized and totally incurable eyes, they would deserve well of us, of the profession, of humanity.

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*Clinical Lectures on certain Acute Diseases.* By ROBERT BENTLEY TODD, M.D., F. R. S., &c., &c. London: Churchill. 1860. Fcap., 8vo, pp. 487.

THE recent death of Dr. Todd, in the midst of a career of great usefulness, combined with his important position for many years as a clinical teacher in King's College Hospital, served to throw a deep interest over this book at the moment of its publication; and, perhaps, at the same time rendered critics more alive to its merits, and less sensible to its faults. After the lapse of six months we still feel the shadow of the lamented and honourable author hovering over his book, intended apparently by himself to be a final and complete exposition of the notion that "much of the practice of former days rests upon the insecure foundation of a partial and imperfect diagnosis of the primary disease, and a very inadequate interpretation of the subsequent phenomena of the case."—p. xi. of *Preface*.

It must be confessed that Dr. Todd has left no doubtful evidence of the wide divergence of his views from those prevalent even among the moderate adherents of the elder school, but has rather chosen to assert his doctrines, and display his practice, in a manner the most unreserved. This is very advantageous for the purposes of controversy; while the clear method by which he has illustrated his Brownian practice in the book before us will constitute it, for a long time to come, the text-book of the art of stimulation in *acute* disease; which, let it be remembered, has ever been accepted as the crucial test of its value. But we venture to predict that this work will be something more. It will be a new starting-point—not from Brown forwards—but in the opposite direction. It will be a landmark in the medical history of our time, noting at once the farthest flow of the mighty tide of therapeutical innova-



tions, and specially of resistance to antiphlogosis, and marking, at the same time, the commencement of an ebb which possibly may not terminate in this generation. No man can hope to effect more with stimulants than Dr. Todd has done; can use them more freely in all stages of almost all forms of disease, regardless of sex, age, habit, and symptomatic modifications. The young sempstress of eighteen, labouring under typhoid fever, and the veteran drunkard afflicted with phlegmonous erysipelas, come in for the same doses of the same fiery stimulant, brandy. How facile must appear the art of medicine to the students of such a clinique! How consoling to the conscience of young men, wanting in self-reliance, and fearful that something more might have been done to ward off the fatal issue of disease, must be the reflection that the simple exhibition of an ounce of brandy every half-hour, and beef-tea and quinia enemata every four hours, do form, in very truth, the "law and the prophets" of the *ars medendi*. No man, we say, can hope to improve on Dr. Todd in this aspect; and therefore, it becomes us, as critics, to give a full summary of the conclusions arrived at by a teacher so distinguished and so much beloved by a numerous body of students.

In the carefully written Preface the following conclusions are summed up. They are important as giving a clear idea of the whole book:—

"1. That the notion so long prevalent in the schools, that acute disease can be prevented or cured by means which depress and reduce vital and nervous power, is altogether fallacious.

"2. That acute disease is not curable by the direct influence of any form of drug, or any known remedial agent, excepting when it is capable of acting as an antidote, or of neutralizing a poison, on the presence of which, in the system, the disease may depend (*materia morbi*).

"3. That disease is cured by natural processes, to promote which, in their full vigour, vital power must be upheld. Remedies, whether in the shape of drugs, which exercise a special physiological influence on the system, or in whatever form, are useful only so far as they may excite, assist, or promote these natural curative processes.

"4. That it should be the aim of the physician (after he has sedulously studied the clinical history of disease, and made himself master of its diagnosis) to inquire minutely into the intimate nature of these curative processes; their physiology, so to speak; to discover the best means of assisting them; to search for antidotes to morbid poisons; and to ascertain the best and most convenient methods of upholding vital power."

Dr. Todd then proceeds to hint that the time is coming when the distinction of acute inflammations and acute diseases, in general, into *asthenic* and *sthenic*, will be discarded. This last averment may be fairly taken as illustrative of the author's teaching; essentially revolutionary and dogmatic, as it appears in this book. It is too obvious that his acquaintance with the classical delineations of disease was far inferior to his acquisitions in modern research, and hardly equal to his great abilities. This must have seriously tended to impress upon his mind a tone of thought, which, for want of a better term, we must be allowed to term 'physiological,' as distinguished from 'clinical.' But this is not sufficient to account for such a statement, opposed, as it is, by daily experience. For the book of nature was ever before him. Illustrations of disease were constantly submitted to his eye, under the most favourable circumstances for careful observation. The fact is, that Dr. Todd commenced his professional career in London, when the use, almost indiscriminately among the mass of his brethren, of the antiphlogistic regime nearly rivalled the practice of the immortal Sangrado. His acute mind must have often noted the defects of such a routine; and his critical observations would have been stimulated the more easily, as he had seen in this city—of whose medical school his father was so eminent a member—a mode of viewing and treating disease based essentially upon a thorough appreciation of the depressing nature and proclivities of morbid processes. Nevertheless, it would appear from numerous passages in this volume, that Dr. Todd, in his earlier career, rather went with the London stream, than with Dublin reminiscences. But a violent reaction was at hand, and in this, the revolutionary epoch of his medical career, he lost his balance. Unhappily, in the midst of a brilliant success, his life was cut off, and all opportunity denied to him of finding in a wise eclecticism that medium between a promiscuous antiphlogosis and rash stimulation, which seems to be the final resting-place of all sound medical experience.

The distinction between diseases exhibiting a *sthenic* character and those marked by an *asthenic* character, though denied by Dr. Todd, is, perhaps, of all the classifications of disease, the most fundamental—the most true to nature. It is one which is made instinctively after the simplest observation, and yet confirmed by the most rigid inquiry and the most searching philosophy. What a strange condition of mind is evinced by the denial of so elementary a view of our science! It lies at the root of the theory and of the practice inculcated in

this book, and, in our opinion, vitiates from the bottom its reasoning. Alas! the routine man of the lancet and tartar emetic will find an easy victory here, and ask with astonishment whether it be a delusion that one patient at one time is strong under disease, and another weak—the whole powers of life in a state of firmness and tension in the one, in a state of yielding and laxity in the other. He will further inquire how it happens, if this able teacher be correct in his interpretation of bedside phenomena, that this man, labouring under pneumonia in an acute form, dies from the progress of the disease, in consequence of its invasion of a large portion of lung structure, in a short time—asphyxiated, in short, with heart and nervous system exhibiting vigour and resistance; while that patient, with a moderate portion of his lungs invaded by exudation, dies from the existence of an amount of depression of the vital forces—pre-eminently of the functions of the nervous and circulatory systems—simply incompatible with the maintenance of life. There is no answer to these questions in Dr. Todd's philosophy—none anywhere, excepting in the admission of the basic distinction that sometimes the general powers of life sympathize in the direction of strength, and sometimes in the direction of weakness, with the local disease; in other words, that the disorder is now sthenic—now asthenic.

The first of the preliminary propositions contains, by implication, a statement which we can by no means admit: it is, that antiphlogistic measures necessarily “depress and reduce vital and nervous power” *in disease*. The contrary is a matter of familiar observation in reference to three, at least, of the elements of that regime—bleeding, emetics, and purgatives. The vital and nervous powers are certainly anything but depressed after a copious bleeding in traumatic meningitis; the countenance and the pulse forbid, too, any such inference after the copious application of leeches to the abdomen in certain forms of peritonitis. We lately heard of a great prize-fighter attacked by an acute disease, who, after a copious bleeding, felt such an improvement in his “vital and nervous power” that he suddenly thrust out his arm at full length, and cried, “he was ready to fight now any man in England.” The effect of an emetic in producing reaction—increase, rather than diminution of power, in certain circumstances—needs no further allusion. Of purgatives we can aver, as has been admitted in every age of medical history, that there is no means at present known comparable with them as powerful exciters and regulators of the nervous system in certain morbid conditions. The instantaneous relief of “depressed vital power,” in a variety of

diseases, after the energetic action of a cathartic capable not merely of emptying the bowel, but of stimulating its numerous glands, must surely be beyond the reach of question. We must, however, go even further than this, and ask the practical reader whether he has ever remarked, in fevers and other acute diseases, a depression of vital power—a dull stupor of the nervous system—a perturbation of the whole functions, under an excessive administration of alcohol, which have rapidly been replaced by steadiness and calm after its withdrawal? Yet, in Dr. Todd's view, alcohol necessarily exalts vital power, and strict diet as necessarily tends to reduce it. If we examine the proposition from another aspect, we can only use the words of Dr. Symonds, that our "memory swarms with cases, each pressing forward to be the first to give a wondering and emphatic refutation of this extraordinary dictum"<sup>a</sup>. We feel that it is impossible to question with success the extent of the power, in certain cases and seasons, exercised by bleeding, local and general, tartar-emetic, active purgation, cold applications to the surface (and such favourable operation seems to be frequently brought about through the medium of a temporary reduction of vital and nervous power), after a period of excitement and exaggeration of function. We must admit the existence of a school of physiological medicine, whose glory it is to deny these and similar facts. But this school is under the domination of hypothesis; so that the plainest teaching of experience is set aside when happening to traverse its speculative deductions.

Another shibboleth of this school is incorporated in the second proposition of Dr. Todd, "that acute disease is not curable by the direct influence of any form of drug, or any known remedial agent, excepting when it is capable of acting as an antidote, or of neutralizing a poison, on the presence of which in the system the disease may depend—*materies morbi*." Here the author frankly avows that, in all diseases of acute character, there is a *materies morbi*—a something to be neutralized, if drugs or remedial agents have any direct influence on their course. A far more explicit affirmation of the same doctrine, without the qualification, is to be found in other parts of the book, whence we infer that Dr. Todd viewed morbid processes in the most exclusively humoral light. This sadly impairs the utility of his prelections, while it throws an air of simplicity over the doctrines and practice inculcated very seductive to the youthful reader. It will be observed that no specific is admitted into this charmed circle of speculation. In the Lecture on

<sup>a</sup> Medical Times and Gazette, vol. i., p. 350, 1860.



Erysipelas the tincture of the sesquichloride of iron is denied all modifying power over its progress. We suppose that quinia, whose influence over intermittent fever is indisputable, ranked with Dr. Todd as an antidote, although certainly there is not a tittle of evidence that this disease is produced by a poison, or *materies morbi*, in his sense, and the whole history of the malady may be not unfairly considered as illustrative of some subtle nervous aberration.

The rashness of the assertion contained in this proposition becomes evident on the slightest consideration. Who, for instance, can deny the "direct influence" of the affusion of cold water in *coup de soleil*? And this is an acute disease enough, tending to a rapidly fatal termination, where we do not suppose any "poison" can be imagined to exist. But our objections lie at the very root of the matter, apart from all affairs of detail. The plain question that we must ask Dr. Todd's numerous defenders is—Do we know enough of the inner causes of disease, the mutual actions of the body and things without? have we such trustworthy knowledge of the *modus operandi* of remedial agents, that we are enabled to declare that these latter act in one way only, in so far as they are able to influence disease? Such an interrogatory carries its own reply on its face. We will not now insist on the obstructive tendency of such statements as we are combating, upon the progress of inquiry into the physiological and therapeutical properties of drugs. We will content ourselves with noticing that all our present acquaintance with these would lead us to reverse Dr. Todd's dictum, and rather induce us to believe that the most direct influence exerted by our curative agents is on the solids, on the minute vessels and nerves. The most curious part of the whole subject, however, is, that we have absolutely no evidence of the existence of a morbid poison in the great majority of acute diseases; that the existence of a *materies morbi* is doubtful in almost all; that the *modus operandi* of such as we have some notion of, is altogether unknown to us, and that, so far as we know, there is no remedial agent which can in any sense be said to be an "antidote" to a morbid poison. The coarse toxicology of the mineral and vegetable kingdoms seems to have strangely warped the author's fine mind, and to have led him to give a purely fanciful basis to therapeutics.

The third proposition, "that disease is cured by natural processes, to promote which, in their full vigour, vital power must be upheld," reads like a self-evident truth; but then we must inquire what the author means by "vital power" and by "natural processes." We find that in the author's sense a na-

tural process of cure is essentially one of elimination. Certain exudations having been effused, and certain changes having been effected in the exuded materials, the next and final step is their discharge, either immediately by conduits arising from the diseased organ, as, according to the author, in pneumonia, or mediately through the instrumentality of the vascular system. But are these evacuations or excretions in fact the process of cure, or the result of the process of cure? In typhus fever there is no exudation *essential to the disease*;—there is no critical evacuation, but as an exceptional condition. In ague, there is a remarkable series of alternating periods of quiescence and excitement, the final stadium of these latter being sweating. But this seems to be in no manner an effort at elimination, but the inevitable result of antecedent states of the vessels and nerves. We do harm, often very serious mischief, by attempting to promote what wears the aspect of so very natural a process of cure. On the contrary, we produce the most perfectly curative result known to medical science by a drug which stops these alternating periods, and prevents the evacuation through the skin.

In reference to “vital power” we must not forget the fundamental postulate of Dr. Todd’s pathology, that disease and debility are convertible terms, indicating strictly correlative conditions. Now, for the purposes of the practical physician, his sole object of anxiety in this relation must be—is there sufficient, a plus or a minus *vital resistance* to the disease? And if he would be anything but an empiric, if he would become able to deal with morbid processes, so as to give them an unembarrassed sphere of operation, it behoves him to set about this investigation with an earnest humility, such as he cannot fail to be inspired with, if he only considers that it comprises a full half of the whole duty of the physician. The appreciation of this point, consciously or unconsciously, makes the true clinical observer. Inattention to it is the characteristic of schools—where the study of the natural history of disease takes the place of the proper art of medicine.

One side of these inquiries has been well put by Dr. Symonds of Bristol, in the paper previously cited. “In the early period of inflammation and its attendant fever, where and what is the vital power to be upheld? Take the three great functions of life; is it the power of the heart? This is already inordinately and dangerously strong. Is it the power of respiration? This too is, excepting when the lungs are themselves diseased, above the normal rate. Is it the power of the nervous system? Already sensibility is too acute, and thought too active, while in-

creased motion would be positively detrimental. But other expressions made use of, such as 'treatment from the beginning of a decidedly supporting and stimulating nature,' imply that strong nutriment is to be given, in order, I presume, to repair waste. But as yet there is no waste to be repaired. The skin is obstinately dry, and there is far less expenditure than natural from the liver, the bowels and kidneys, and other excretory organs. The only function of the system that denotes anything like tendency to the restoration of order, is the instinct which refuses food. More fluid is craved, "because, though it leaves the system so scantily through the natural outlets, it disappears in a mysterious way, and seems to enter into some abnormal chemical combinations with the blood and tissues." In such conditions as these it is more than probable that the profuse administration of alcohol may neither uphold vital power nor promote any natural process of cure. Dr. Todd seems to have had the keenest idea of the impropriety of embarrassing the *vis medicatrix* by bleeding, mercury, strict diet, and so forth; but it seems to have never occurred to him, that the administration of a couple of imperial pints of brandy every day to a young girl in her teens, suffering from an acute disorder, may possibly disturb the natural evolution of pathologic processes to an infinitely greater degree. Mark, too, again, how completely *a priori* reasoning negatives the author's views. We have strong analogical grounds for the use of bloodletting; for sometimes nature brings about the most decisive relief by spontaneously setting up an evacuation of blood. The same may be said of purging, sweating, biliary vomiting; but where have we an analogy in the natural history of disease for the employment of alcohol? It is true, that when the nervous and vascular systems show a minus resistance to the disorder—when an ataxic condition is superinduced early or late—or when the waste effected, urgently demands attention to the maintenance and increase of assimilation,—alcohol constitutes a precious resource; now, as a neurotic stimulant—now, as a valuable means of support. But it is easy, nay, necessary, to admit this, without allowing that brandy exercises a direct curative influence over all acute diseases, in all stages.

We will not delay longer over the prolegomena of the lectures. We only remark, that our objection to the fourth proposition is based on its contracted view of the physician's scope in searching for remedial agents. According to the author, we have only "to search for antidotes to morbid poisons, and to ascertain the best and most convenient methods of upholding vital power." The duty of the physician we believe to be, to

endeavour to combat morbid processes by every instrument in his power—to listen to the dictates of experience, and watch the actual effects of the measures he employs—pleased when he can bring an antidote to bear upon a morbid poison, but prepared to administer all and every remedy, of whose beneficial operation he has a sufficient warrant.

In the first three lectures the subject of rheumatism is discussed; and, as in every other part of the work, admirably illustrative cases are reported by the able clerks of the hospital. On the whole, we think the author's practice in this malady enlightened and judicious, although we shall be obliged to dissent from many points of detail. In discussing the first case, that of a young woman, aged 23, who had recently been confined, he alluded to the profuse sweating by which it was accompanied:—

“This is a special phenomenon of the fever. It is not distinctly of a critical or sanitary nature, as we sometime see it in other fevers, for the sweats do not produce any marked immediate good effect, either on the joints which are implicated in the disease, or on the general state of the patient. In this case, the sweating was profuse; you doubtless recollect how it poured forth from the patient's head and chest, and, indeed, from the surface of the body universally; and from that, you may judge how much fluid must have escaped through the channel of the sudatory apparatus. I must say, however, that I do not regard these sweats as otherwise than salutary within certain limits; I think that, in the early days of the fever, they should be encouraged as an important medium for the elimination of noxious matter from the system, and that you ought to be cautious how you stop such sweats, except where they are distinctly debilitating to the patient.”

It is proper to observe that, in cases like the one here discussed by Dr. Todd—that is, rheumatism occurring soon after confinement—sweating is an especially characteristic symptom. Sudamina appeared in this case, and we have observed the same condition. But is the sweating of acute rheumatism an eliminative effort of nature? Do measures calculated to increase it, diminish the severity and hasten the cure of the disease? Surely not. In rheumatism we have a good instance of an evacuation through a great secretory apparatus, being anything but a part of nature's system of cure. It is a symptom only of a morbid state; just as the vast overflow of aqueous fluid through the kidneys in diabetes is a symptom of a given condition, which obtains no relief from such overflow. We are well convinced that the excessive diaphoresis of rheumatism is itself a secondary cause of various morbid sequences in this



malady, deserving far more weight than has been allotted to it. Fatal cases have occurred to us in the female sex during the last dozen years, which we have referred mainly to the profound asthenia, and tendency to fibrinous clots, brought about, as we have believed, by the intense action of the skin. It is a matter of constant observation, that the first indications of relief coexist with an increase in the urinary secretion and a diminution in that of the skin. Sometimes a spontaneous diarrhoea seems to be the starting-point of improvement. Yet, Dr. Todd says, "it is probable that the *materies morbi* in rheumatic fever is lactic acid, or some analogous agent. We know that the natural emunctory of this is the skin."

The author plainly exhibits his consciousness of the severity of the sweating as a real symptom of the disease. For, in alluding to the useful application of cotton wool to the joints, he warns his hearers that patients are sometimes distressed by its adding to the existing diaphoresis. The quotation we have just given equally demonstrates the doubts in his mind of the sanitary nature of the evacuation. But he was tied hand and foot to the doctrine of elimination, natural and artificial, in his general directions to his class, so that he lays great stress upon the necessity of promoting the emunctory action of the skin. This, however, was unnecessary, taking the author's own doctrines as true. Sweating is not a "natural process" of cure in rheumatism; and, therefore, not one to be either excited or promoted.

In the general directions at the end of the second lecture it is stated, that you must give purgatives to such an extent as to keep the bowels in a loose state, taking care not to carry this treatment so far as to weaken your patient. The records of the cases leave the impression, however, upon our mind, that in his actual practice deficient attention was bestowed on the bowels.

Dr. Todd's third case is that of a labourer, age 29, whose health had been generally good, and who was accustomed to liberal potations of beer. He was admitted on the 21st of September, 1854. Pericarditis was noted; all the phenomena were those of intense reaction. On the fifth day after admission, the pericardial friction sound continuing, and the number of joints affected being greater, but the tongue cleaning, bowels open, appetite improved, urine clearing and falling in specific gravity; brandy was administered, whether three or six ounces per diem is not clear. "There was no important alteration for some days."

On the 3rd of October it was necessary again to blister the chest.

On the 4th, sudamina are noted.

On the 7th, being the seventeenth day from his admission, we read the following report:—

“He is now improving daily. Pulse, 84; respirations, 26; sleeps well, and does not sweat; the pain is confined to some of the muscles; a slight friction sound alone remains audible at the apex of the heart; tongue clean; appetite good; bowels open; he still continues the brandy.”

After this he remained some weeks in the hospital gaining strength; there was a return of slight pain in the joints, for which iodine was applied. Had this patient been bled, what a homily the author would have read to his class upon the *nimia diligentia*, the tardy cure, the slow and imperfect convalescence, thus engendered. For our own part, in the interests of truth, we must declare, with a solemn earnestness, that the case is a perfect illustration of the *nimia diligentia*. The disease was fast approaching to a natural termination on the 26th of September. Brandy was administered, and it took eleven days more to obtain the recurrence of a similar condition to that which existed previous to its administration. We are deeply impressed with the fact that there is no acute disease of a febrile nature which bears alcohol so ill as rheumatism; and we do not think any physician can interrogate his clinical experience, his mind unbiassed by prepossession, without arriving at this conclusion.

The fourth case of rheumatism occurred to a girl aged 16. It was one of the utmost severity. She was ordered alkaline and neutral salts of potash, and a little opium every four hours. On the third day of the treatment the pulse had fallen 36 beats, and she was free from pain.

On the 10th day of the attack she was quite free from pain. There was no relapse, and she was soon after discharged well. This is an admirable illustration of judicious treatment. There were no attempts to “uphold vital power;” not a particle of stimulant of any sort was given. There were no violent efforts to stimulate eliminatory organs. No purgative, no sudorific, was administered.

The fifth case was also one of great severity. The treatment adopted consisted in giving solution of acetate of ammonia, and laudanum. Although endo-pericarditis attended this case, on the third day of treatment amendment commenced to appear, still more confirmed on the fifth day; and her after-

progress seems to have been most satisfactory; not a particle of stimulant was given. In these cases we have examples of the cure of rheumatism on well recognised principles. They show that Dr. Todd's practice was often superior to his dogmas, as it could not fail to be in one so acute and conscientious. But are his numerous disciples equally discriminative? Unhappily, the dogmatic teaching of a powerful mind is remembered, when the judiciously observed exceptions are forgotten; and experience offers abundant proof that the worst parts of an *ultrageous doctrine*, if we may quote one of Canning's significant phrases, are more apt to be carried out by enthusiastic disciples than the best,—Marat seems to come quite naturally after Mirabeau.

The second lecture is mainly occupied by criticisms of various modes of treatment of rheumatic fever. Bleeding is severely condemned, but, in the main, not more severely than it deserves. However, it is satisfactory to know that routine venesection had disappeared a dozen years ago from these islands. No warning is certainly required against this measure now-a-days. In reference to colchicum and guaiacum, it is stated that "these drugs, but especially colchicum, have long been considered to possess a specific influence over rheumatic and gouty affections," which Dr. Todd considers to be a fallacy. It is long since any competent person believed that colchicum exercised a specific influence in acute rheumatism. For many years past, it has disappeared from the medical man's memory as one of the things "good for rheumatism;"—for rheumatism, we mean, of febrile form. Quite as surely, colchicum maintains its position as more potent, *longo intervallo*, than all other remedies with which we are acquainted, in gout, in which disease we must be allowed to term the influence of colchicum strictly "specific." It is true that we are better acquainted both with the natural history of the disease, and with the disadvantages of the drug, than formerly. We know that it is not desirable to give this medicine on every occasion of a gouty attack. We have now learned that the *attack* may be cured, while the *disease* may remain. Nevertheless, nothing has hitherto come to light calculated to shake the opinion of our immediate predecessors, that colchicum constantly annihilates a paroxysm of gouty pain, though it may leave untouched the gouty disorder. The observations upon the treatment by opium are excellent. "You will find it extremely serviceable in practice, but I do not recommend it alone." It is further observed, that "its great value consists in relieving suffering, and soothing the nervous system, while

it promotes diaphoresis." The circumstance that it is apt to stimulate the last to an extravagant degree, has often compelled us to withhold it, or administer the drug in night-doses only.

Haygarth's plan of giving bark, since imitated in Paris by M. Solon, is disapproved of. It is admitted by the author that he has "seen great good done rapidly by the use of quinine, in cases where the sweating is colliquative, and the urine copious and pale, with abundant precipitates of *pale lithates*." These constitute trustworthy marks by which the propriety of the quinine treatment may be determined, as we have had occasion more than once to note. The local treatment advised consists in cotton wool and blisters. Leeches are said to be "useless or injurious." We cannot subscribe to this dictum. Very frequently one or two joints are the seat of intense pain for several days. The patient especially refers his suffering to these particular joints. We can speak from experience in our own person, as well as from wide clinical observation, that, in these circumstances, leeches will not "probably fail to give relief." On the contrary, the agony of the patient obtains immediate and often permanent diminution.

The author sums up his treatment as follows:—

"You perceive that all the means employed in this mode of treatment tend to elimination, and to the relief of pain; the opiate sudorific affecting the skin, the nitre and alkaline salts acting on the kidneys, the purgatives on the mucous membrane of the bowels, the wool and blisters on the joints.

"During this treatment, while you allow your patients the liberal use of simple diluents, you must give a fair amount of nourishment from the first, and I think this may be best supplied by a small quantity of good beef-tea, given frequently throughout the day.

"Often you will find it useful, *and always when there is a tendency to delirium*, to give stimulants, such as brandy or wine."

The italics are our own, for we are anxious to draw the attention of our readers to the tone of Dr. Todd's teaching, as evinced by this passage. We admit that the existence of delirium is very often, indeed, a sound reason for the administration of alcohol. We willingly further admit that the late clinical Professor of King's College Hospital did great service by his frequent allusions to this fact; but will any experienced physician, acquainted with the literature of his profession, be able to go along with the author in so wholesale and exclusive a declaration as that stimulants should *always* be given when there is a tendency to delirium? Dr. Todd seems to us to



have been like Napoleon the First, and many other men of strong character in history. He would only see one side of any question submitted to him. The other must be ignored. Doubts, however, of the certainty of our view, if inconvenient while giving instruction, are not rarely prudent in practice.

The third lecture is devoted to the consideration of the complications of rheumatic fever, and chiefly to the cardiac diseases incident to the disorder. The author insists, and we believe with justice, on the great importance of free blistering in the cardiac inflammations, but energetically repudiates blood-letting. That the author's statements, relative to the injurious influence of excessive bleeding, and his theoretical arguments, based on trustworthy modern researches, deserve the utmost weight, we are not disposed to deny. But our clinical experience of the value of local bleeding, to a moderate degree, in the primary stage of endocarditis or pericarditis, has spoken too decisively to be doubted. There is no measure that we are aware of, which produces relief to so marked a degree,—and knowing the similarity of morbid processes, that like results follow from like agents when employed in similar general conditions, we are fairly at a loss to account for Dr. Todd's observations on this point, excepting on the supposition just alluded to, that he was so influenced by the fears of diminishing the "vital fluid," he resolutely shut his eyes to the opposite phase of the question.

The delirium of rheumatism is discussed with great ability. The description of this symptom offers a good example of the lecturer's powers of delineation:—

"It sometimes comes on gradually, the patient having been a little talkative and wandering for two or three nights; sometimes it comes on quite suddenly. In its general character it resembles delirium tremens; generally, however, exhibiting less of the nervous tremor which belongs to intemperance. The patient is restless, busy, talkative, picking or pulling the bed-clothes, frequently rising in bed, and wanting to get out of bed, reaching out his hand, as if to catch hold of some object before or behind him, and sometimes, a most important symptom, obstinately refusing to take either food or medicine.

"In many instances, as I have already said, this delirium ushers in pericarditis, pleurisy, or pneumonia; frequently, however, it occurs after one or other of these maladies has set in, and sometimes it occurs without them. It has, therefore, I think, no necessary connexion with these internal inflammations, although it frequently accompanies them."

Should death occur, the membranes of the brain are stated

to be perfectly free from abnormal deposit, the pia mater and gray matter pale; and the sub-arachnoid fluid is increased in quantity. "These signs indicate not only that the brain has been imperfectly supplied with blood during life, but that the vascular pressure upon it is less than it ought to be; and that, consequently, an increase of the subarachnoid fluid has taken place."

In again remarking on the absence of effusion about the brain in the post-mortem examination of the thirteenth case, it is said "these effusions, indeed, we now know, are *results* of the diminished size of the brain which follows its imperfect supply of blood, and its impaired nutrition; and, as they do not exert any undue pressure on the brain, or any part of it, they produce no symptoms during life."

Now, we entirely coincide with the author's general views of rheumatic delirium; we accept his delineation of its characters, as, in the main, correct; we agree with his declaration of the necessity for supporting and stimulating the vital powers in the great majority of such cases; but two facts, altogether beyond dispute, preclude our acceptance of these exclusive pathological dicta:

1st. That delirium is indisputably a symptom of inflamed brain or membranes as apart altogether from rheumatism.

2nd. That *occasionally* in this disease, where delirium has occurred during life, the well-marked indications of inflammatory exudations have been observed after death<sup>a</sup>. Surely, it might have been sufficient to insist on the great frequency of delirium in rheumatic carditis, unaccompanied by any brain inflammation, on the importance of recognising the fact of effusions within the skull-cup being often the *result*, rather than the cause, of morbid processes, without annexing the total denial of other aspects of these questions. These are not points for mere theoretical debate. They are relevant to the difficult problem, How is the rheumatic delirium to be treated? We have already indicated our general agreement with the author in his view of the necessity for supporting treatment when this symptom appears, the more especially in the later stages of the disorder; but this forms a portion only of his treatment, which also includes opium. It is, indeed, stated that sometimes patients "who have been actively delirious will suddenly fall into coma, and die;" and elsewhere it is averred, that when they evince "a marked tendency to coma, then, of course, you will not

<sup>a</sup> Watson's Practice of Physic, vol. ii., Fourth Edition, page 302; both text and foot-note.

use opium;" but the author's practice negatives, in the most precise manner, these wise precautions. On the same page as the first of these remarks is made, the case of an university student, aged 22, is given. It was evidently one of great severity. Ten days after the commencement of acute symptoms, Dr. Todd was telegraphed to see him; he had a full, throbbing pulse, and soon became very restless and delirious. At midnight of the same day he again visited him, and detected a friction sound over the heart; "the delirium had increased, *with a comatose tendency*; but he could still be roused, and then recognised me and others about him. I ordered him half a drachm of the bicarbonate of potass, and a grain of opium every three hours, and a small quantity of brandy. In the night the delirium increased, and he refused to take food or medicine; *his breathing became catching*; pulse 120; and soon after nine o'clock the next morning he died."

In his remarks the author declares that if he had to treat such a case from the beginning, he should employ "opium at once." Possibly it might have been beneficial to administer this drug at the beginning; but does it therefore follow that the actual period of its administration was justifiable? Did we feel at liberty to make further comments on the case, they would be very different from those of the author.

The next patient was a young servant girl, aged 17. Delirium was a marked feature of the case. So far as we can judge from the rather obscure account of the treatment, somewhere about the fifteenth day opium was pretty freely administered; a few days afterwards her pupils were contracted; she was drowsy, "and evidently much affected by the opium." She lived twenty days afterwards, constantly taking opium; delirium returning, apparently after a short cessation, but marking the case to the last day.

The next case is also that of a woman, aged 34. The symptoms were severe, and attended with marked endo-pericarditis. She was admitted on the 18th of June, 1844, having been ill for more than a week. Dover's powder, dose not mentioned, was given every four hours. At 11 P.M., June 19, the patient up to that time complaining of little or no pain, the physician's assistant was called to her, and found her delirious, talking incoherently, and the delirium accompanied by hallucinations; pulse somewhat increased in frequency, 128, weak and compressible. She was ordered thirty minims of the liquor opii sedatives immediately. She slept after taking the opium, but at two o'clock A.M. the physician's assistant was again sent for, in consequence of her having had a convulsive

fit affecting all her extremities. "He found her lying on her back, *her pupils very much contracted and insensible to light*; pulse 132, weak, but regular; her head hot, but the forehead perspiring; the respirations were 30, and of a croupy character. *She was quite comatose*. She had a return of the convulsions, screamed out, and died." Comment is unnecessary here.

The next and last case is specially adduced as affording an illustration of the benefit likely to arise from "the early and liberal use of opium and stimulants," where delirium accompanies the rheumatic phenomena. In so far as regards the former, at least, the case is a remarkable example, taken from an unimpeachable source, of the exactly opposite, namely, the ill effects of the so-called remedy. It was a footman, aged 19, of temperate habits, admitted on the 10th of February, 1852. "He had been taken ill five days before; many joints were affected, and a systolic bellows-sound was heard at the apex of the heart on admission. He was ordered bicarbonate and nitrate of potass, with five minims of laudanum, every four hours. He passed restless nights for the next two days, although the laudanum had been increased to ten minims. It was now increased to twenty minims. On the 14th, pericarditis appeared; on the 15th, he was for the first time delirious; on the 17th, being restless, he was ordered a night-draught of thirty minims of laudanum; ammonia was added to his mixture, and he was ordered eight ounces of wine in the twenty-four hours." That night, however, he was very delirious, trying to get out of bed, and leave the ward. On the 18th, he was ordered a pill containing two grains of calomel, and a quarter of a grain of opium, with each dose of the mixture. On the 19th, we find the delirium was not confined to the night, but he continued muttering to himself in the day, unless aroused or spoken to. The opium in his medicine was now increased by five minims, making twenty-five minims, and he took it every three hours. On the 20th the delirium still continued, and he seemed unconscious of what was passing around him; his pupils were contracted; pulse, 116; respirations, 36. *The mixture was omitted*, and five grains of carbonate of ammonia were given every two hours, together with half an ounce of brandy in beef-tea every hour; the pill was continued every six hours." That same night he was much quieter, and slept a little; in the morning his respirations had fallen to 26, and his pulse to 104. The next night was also comfortable. On the 24th he was free from pain, and progressing favourably, just a fortnight from his admission. He continued in the hospital about a month; morbid sounds continued to be heard for



some time about the heart, and there was also some chronic swelling of the knee.

We beg the reader's attention to this case—it is specially invited by the author himself. Here is a young man, almost a boy, of temperate habits, who gets an attack of rheumatism. There is at first no delirium; he is treated *inter alia* with opium. It is increased to 20 minims of laudanum every four hours; delirium comes on. The laudanum is continued, and 8 ounces of wine are ordered. He is that very night "very delirious." Solid opium, in quarter-grain doses, is given with the mixture; the delirium, previously confined to the night, comes on in the day; five minims are added to the laudanum, and he takes it every three hours. He becomes unconscious; delirium continues; the pupils are contracted. All opium is taken off, with the exception of one grain, in the 24 hours, in doses of a quarter of a grain every six hours. Brandy is freely administered. From that hour, the patient begins to recover, and he becomes quiet. If this be an illustration of the beneficial effects of opium, will Dr. Todd's disciples be good enough to inform us of the nature of the evidence on which they rely, as proof of the evil effects of any given drug? For our own part, we think that stimulants were prematurely administered, and aided in embarrassing the progress of the case. We are sure that the opium had a most prejudicial effect, and equally certain that the continuance of this drug on the 20th, in the same quantity as before, would have swiftly brought to pass a fatal termination. We would not be misunderstood. We know full well the benefit of opium in many cases of acute rheumatism—but there are conditions which militate against its employment—and those conditions meet in the cases we have discussed. This remedy constantly goes wrong in the female sex in all diseases. We have seen the most confusing phenomena superadded to the existing state, more or less allied to hysteria, after the administration of a large dose of opium to a female labouring under an acute disease, and especially under rheumatic fever. Of the four cases just detailed, three were fatal; two of these were females. Opium constantly disagrees with the young; we have observed this so often that we believe it to be connected with some definite condition of the nervous system. The ages of these patients were respectively 22, 17, 31 (a woman), and 19. Again, the cerebral phenomena of acute rheumatism, especially delirium, seem to be influenced only in an unfavourable sense by opium. We have noted this fact so often, both in hospital and private practice, that we

think it our duty to repeat here a warning we have often orally made, that this drug should be administered under these circumstances with the utmost circumspection—generally omitted, and, if given, only in small and rare doses. Nothing can be imagined more different than the result of a well-timed dose of opium in certain special conditions of fever, and that of the same agent in the states we are now concerned with; and it offers fair evidence that the causes in operation producing the morbid cerebral manifestations are also different.

The fourth and fifth lectures are occupied with the subject of continued fever. We may observe here that Dr. Todd fully accepts the results of modern researches, that typhus, typhoid, and relapsing fever are produced by “distinct poisons.” These lectures abound with admirable observations, and show more than, perhaps, any other portions of the book, the practical powers of the experienced physician. To sustain the vital forces while disease is undergoing its proper evolution is, if not the same, at least the chief part of our duty in fever, which would seem to offer a natural sphere, in which the author could show the value of his doctrines and practice to the most advantage. The cases are characterized by enormous stimulation, to an extent we have never seen in the wards of physicians renowned in this very branch of pathology, and which we have certainly never thought fit to imitate. Thirty ounces of brandy were given daily, during a portion of the time, to the first case, a large bony man, of strong build, thirty-two years of age. He died. The second case, age not given, took brandy and chloric ether. He died. The third case, a girl aged 14, took as much as an ounce and a half of brandy, every hour for three days together, and for the next fortnight half an ounce was hourly administered; this latter quantity, however, being sometimes much increased as occasion required. She recovered under this astounding stimulation—a young girl fourteen years of age! The case is too meagerly reported for us to judge in detail of the effects produced by thirty-six ounces of brandy in the twenty-four hours, under these circumstances of age, sex, and disease; but we earnestly draw attention to a point which should never be lost sight of in judging of the treatment of a given case of fever: we mean its *duration*. She was admitted on the 26th of September. It is not stated how many days she had been ill previously. “It was not until the 1st of November, thirty-five days after admission, that she was in a state to warrant us in diminishing the quantity of stimulants; but on that day the pulse was 120.

On the 4th it was 114, *falling under the diminution of stimulants*. She was discharged quite well on the 4th of December, having been about *nine weeks* under treatment." This case, therefore, warrants the opinion that the excessive amount of stimulants administered tended to the protraction of the fever so greatly beyond the average, and, in fact, to the extreme limit to the duration of enteric fever, of which form this seems to have been an example. But, it may be objected, the case did well; to which we reply, that young persons under fifteen years of age get well of *typhoid* fever, as a rule; and, as regards the protraction, there is nothing whatever in the history of the case to account for it but the violent efforts "to uphold vital and nervous power." The fourth case, a boy aged 15, of infinitely greater severity than the one just mentioned, who lost a pint of blood at stool two days after admission, was first treated with five or six drachms of wine every hour; after the hemorrhage, brandy was substituted for the wine. Afterwards, as the blood continued to flow, and signs of great prostration appeared, the brandy was increased to an ounce every hour. On the tenth day of the treatment convalescence began to appear. Here, then, was a boy one year older than the previous case, who, having suffered from a great hemorrhage, did very well, and recovered quickly under one-half less brandy, and that only administered at all after the loss of a pint of blood had occurred. The fifth case, a woman, aged 36, also one of great severity, had serious hemorrhage by stool. Half an ounce of brandy was given every hour; this was afterwards increased to six drachms. She recovered satisfactorily, and was discharged in the sixth week after admission. The sixth case also passed blood *per anum*, and had other severe symptoms. The subject of the case was a man, aged 20. At first wine was administered in half ounces every two hours. Afterwards, a third of an ounce of brandy was given every hour. This is the maximum of the stimulation. Nine days after admission he was much better; seventeen days after that event, "he was up and convalescent." Nothing could be more satisfactory than the termination and the shortness of duration of this case, greatly promoted, in our opinion, by the moderation with which stimulants were given. Eight ounces of brandy per diem to a patient labouring under intestinal hemorrhage with fever, with tongue half protruded, tremulous, and brown, and taking little notice, is not a greater amount of stimulant than almost every physician in these countries would deem himself justified in giving. The seventh case, a woman, aged 39, died four days after admission; stimulants are not men-

tioned in the record, we presume from an oversight. The eighth case also died, age not given, and the treatment omitted. The ninth case, also of enteric fever, was a nurse-maid, eighteen years of age. The chief characteristics were drowsiness, puffed face, suffused eyes, headach, white tongue, skin hot and dry, diarrhœa, bronchitis, with expectoration of scanty, viscid mucus, of rusty tinge. Six drachms of brandy were ordered every second hour, three days after admission. On the following day she was extremely drowsy, and unwilling to be disturbed. The brandy was increased to an ounce every hour. The same symptoms continued on the fourteenth day of the disease, on which day, and at a subsequent period, she is declared "to have shown a great aversion to the brandy." There was no material change on the fifteenth and sixteenth days of the disease. On the seventeenth she seemed more prostrate; the brandy was increased to *an ounce every half hour*,—two imperial pints and eight ounces per diem to this youthful nurse-maid! No improvement was noted the next day. Profuse liquid evacuations recurred from time to time, and she remained very drowsy. On the nineteenth day there was an increase of the catarrhal sounds; she became more drowsy; her head was therefore shaved. On the twentieth day of the disease "a profuse perspiration, in all probability critical, burst forth," and a very decided improvement took place; the eruption had disappeared from the skin, and the brandy being reduced from an ounce to six drachms, the drowsiness passed off. On the twenty-eighth day of the fever the pulse fell rapidly. On the forty-eighth she left the hospital quite well.

The author appends the following remarks to this case:—

"You will not often meet with so severe a case as this ending in recovery. I cannot but believe that the favourable result was owing to the steady exhibition of support of all kinds, especially of stimulants, from the earliest period of the disease. Still, it is curious to observe, how, about the twentieth day, a marked favourable change took place, and was accompanied by a profuse sweating, apparently of a critical nature."

This case appears to us to have been a precisely representative example of that particular combination of symptoms and conditions which necessitates the restricted employment of alcohol. There were three local lesions, all such as, more or less, to negative profuse stimulation. In reference to the brain and nervous system, we mark the *absence of delirium*, a symptom in which the author reposes so much confidence as indicating the need for stimulus—the absence of subsultus ten-



dinum, jactitation, tremors; the presence of drowsiness. In reference to the thoracic viscera, we note an irritative catarrhal condition, with "expectoration of scanty viscid mucus;" the respirations being once mentioned as 38, once 48 in the minute. There is no allusion to feebleness of the central organ of the circulation. Twice only is the pulse mentioned previous to the day of crisis, the first time as being only 108, the second 116. In reference to the abdomen, the diarrhœa consisted of "profuse liquid evacuations" without any blood—such evacuations as probably the 48 oz. of alcohol daily aided in maintaining. There was considerable tenderness of the belly; but that nearly constant feature of profound adynamia, a tympanitic state, is not mentioned. Finally, she was a young girl, aged 18, labouring under the enteric form of fever. Did she obtain benefit from the stimulus so adventurously proffered, so repeatedly taken "with disgust"? Is there one single point which shows that the symptoms were alleviated?—the course of the disease modified by the measures adopted? None whatever. In the week, about the very day when cases of enteric fever are apt to show an amelioration, a crisis of a marked nature arrived in the shape of profuse perspirations. One of the natural processes of evolution of disease, so much talked of by the author, took place. What had the brandy to do with the hastening or promotion of this termination? Dr. Todd seemed half conscious of the real truth, when inditing the *naïve* remarks we have just quoted. But we are called on to state our belief, that about the twentieth day of her malady this nurse-maid had a happy natural crisis, in which, though overwhelmed with the poison of alcohol, the salutary beginnings of improvement became first manifested.

We have analyzed these cases to little purpose, if our readers have not already observed that Dr. Todd's success in combating the phenomena of fever by no means bears any proportion to the amount of stimulants administered. Let it never be forgotten that all these cases were *enteric fever*, in which there is a far less need for stimulants than in the typhus, so familiar to us in this country. Of the nine cases, four died. We have not space to analyze the remainder, most of which are examples of enteric fever; one appears to have been a specimen of the coexisting typhus and typhoid states. This is the general result of the total number, including those we have analyzed. Out of twenty-four cases, eleven died! Now, we are willing to believe that, to meet the exigencies of clinical instruction, fatal cases may have been introduced to the notice of the class in larger proportion than those with a favourable issue. But

this does not appear on the face of the record; we mark that disastrous results, to a very unusual extent, occurred. We are familiar with the Irish and Scotch typhus. We are still more familiar with the English enteric fever. No such results as these ever came under our eyes in the Dublin fever-sheds in the terrible year of famine; in the crowded wards of the Edinburgh Royal Infirmary in 1848; in the wretched courts or the ill-adapted hospital wards of the great towns of England. This book was written to prove the dominant necessity of "upholding vital power," and of effecting this by alcohol. Dr. Todd's case-books may show another result; but that which appears here leaves us in no doubt that the validity of this doctrine, so far as regards continued fever, *is not proven*.

The sixth lecture is devoted to erysipelas. The seventh takes up the interesting subject of erysipelas of the fauces, and is well worthy of perusal. The malady is admirably described.

"The force of the poison seems to fall upon the pharynx, and to paralyze it, and it must do this, either by benumbing the sensitive nerves, through which the muscular contractions are usually excited by the contact of food, or by extending to the muscles themselves and paralyzing them directly; or, it may be, in both these ways. If you look into the throat of a patient labouring under this affection, you will find the pharyngeal mucous membrane exhibiting a peculiar dusky-red colour, the fauces will be perfectly open, and you will be unable to discover any mechanical impediment to free deglutition; and if now, with your finger, or a pen or probe, you touch the back of the pharynx, you will find that none of the pharyngeal muscles are thrown into action, as they invariably are in a state of health; in other words, you cannot excite the reflex actions necessary for deglutition; and if you give the patient something to swallow, as soon as he gets the liquid or solid, whichever it be, upon the back of the tongue, instead of its being grasped by the contraction of the muscles of deglutition, and guided, as it were, into the œsophagus, in consequence of the complete palsy of these muscles, it falls by its own gravity into the larynx, and is thence immediately ejected, by a powerful expulsive effort, through the mouth and nostrils."

The application of nitrate of silver to the fauces, the administration of food and stimulants, if necessary by the rectum, or by means of the stomach tube, constitute the treatment recommended, and which is very well illustrated by the cases adduced. Sometimes this condition is complicated by œdema of the palate and pharynx. One such case occurred to us where the patient was in imminent danger of suffocation, but it was arrested by free scarification of the parts, followed by the application of strong caustic solution.

The eighth lecture, on "the treatment of acute internal inflammations," is reprinted from Dr. Beale's Archives of Medicine. It is a summary review of the author's mode of treatment and general doctrines. The discussion is *apropos* of the case of a young woman, aged 19, labouring under rheumatic fever, endo-pericarditis, and pneumonia; she was treated with brandy and opium in great quantity, and recovered. The details of the case are not so fully and systematically given as to enable us to form a judgment how far the measures adopted contributed to the favourable issue. It is affirmed that, inasmuch as recovery takes place in pneumonia, either through the non-completion of the solidifying process, or by the rapid removal, either through absorption or a process of solution and discharge, of the new material, which had made the lung solid—the measures ordinarily within our reach do not exercise a *direct* influence in effecting these changes. We may not be able to exercise "a direct influence" on the solution of the exuded materials, but assuredly the medical art is able to step in not unfrequently, and prevent the non-completion of the solidifying process—and in a manner the most direct. Not nearly by, but, so far as we can judge, in the very mode denied by Dr. Todd, by stopping the supplies. But with the school, of which he was so eminent a member, exudation is inflammation, and inflammation is exudation—given then vascular excitement, the first stage, the other stages must follow by necessity. The generation of some peculiar morbid poison is never absent from Dr. Todd's mind. "These acute internal inflammations are very often, I suspect always, connected with the prominence of some peculiar diathesis." So it follows that internal inflammations are cured, not by the ingesta administered, nor by the egesta promoted by the drugs of the physician, but by a natural process, &c. If the patient in question had been bled to twelve or sixteen ounces, and taken tartar-emetic freely, it is declared without scruple that "the hepatized lungs would have remained hepatized."

It is made a matter of complaint that other reasoners take into account only two of the phenomena of inflammation, the heat and afflux of the blood, without taking into consideration both the exciting and the proximate cause of this heat and afflux of blood. To us this seems quite natural—as we know next to nothing both of the one and the other—and there is no doubt of the heat and blood-afflux. How does the author account for the heat? The exigencies of his doctrine compel him to assume that the active chemical process which accompanies the changes in exudation "engenders the great heat of the in-

flamed part." But the heat of parts is greatly augmented where there is no exudation—in blushing—in some erratic superficial forms of erysipelas—in the very initial stage of vascular erythism in numerous local disorders, in various physiological processes well known in the lower animals; of the "active chemical process" mentioned, we have no knowledge whatever; of these facts we have demonstrative evidence. According to the author, we must "feed inflammations" as other active vital processes, and as we cannot cure an inflamed eye so long as the irritating particle of dust remains adherent to it, so, in acute inflammations, we must try and gain time by antidotal means, "or by elimination of the local irritation, *whatever that may be.*" This last qualification is a serious difficulty\*.

The particular patient was not troubled with delirium. "This is uniformly the case in acute diseases, erysipelas, fever, pneumonia, rheumatic fever, in which alcohol is given, as has been done in this case; delirium is kept off by it." Finally, of stimulants it is averred that the harm which they do (*in disease*) is grossly and unfairly exaggerated, *and always due to the slovenly administration of them.* These are bold statements, which we must leave to the individual experience of our readers.

The ninth lecture deals with pyemia, a fatal malady, calculated to severely try the acuteness of the physician. We regret to observe that Dr. Todd has been unable to throw any light on this subject. All the cases of undeniable pyemia here recorded died, although nothing appears to us to have been left undone, in the way of stimulation, to bring about a different termination. There is no blame to be attached to the author or to the treatment. Stimulation to an unlimited degree is the order of the day in this disease, and the more or less gradual progress to death is equally the "regular thing." But there are three cases which recovered, where the existence of the genuine pyemic state admits of question. The first, a young man, having suffered from gonorrhœa and perineal abscess, becomes attacked with what looks like rheumatic fever, pleuro-pneumonia, and two or three abscesses in various parts of the body. He was admitted on the 27th of March, having been ill for about a week, and was not discharged until August, and then "for a convalescent institution." He was submitted to alcoholic stimulation. The second case, one

\* In reference to the morbid principles causing disease, M. Claude Bernard declares, that "in the present state of our knowledge, we possess no means whatever of *neutralizing their action.*"—*Lectures at the College of France, Medical Times, July 14, 1860.*



of the surgical nurses of the hospital, was attacked with inflammation of the right thumb. Pus formed in the palm of the hand and at the back of the wrist, and the exit of this pus was attended with the most marked relief. She complained of pain in the joints, but there is no evidence of general pyemia. All the symptoms seem strictly referable, as is so familiar to surgeons, to the local inflammation and pent-up matter. She was treated freely with brandy and opium. The precise day of the beginning of this disease is not noted, but on the 30th of April it is plain that she had been ill, and under treatment for some days. She was discharged on the 28th of June, "with, of course, considerable impairment of the hand and arm. This patient had altogether about 31 pints of brandy, or about an average of a pint a day, for a month." The third case is preceded by an expression of regret that the treatment was not such as the lecturer would recommend at the period of the lecture. "It amounted, in fact, to almost nothing, excepting the local measures, and to this I attribute the very tedious character of the illness and the slow convalescence." The subject of this case was a woman, aged 32, attacked on October 6, 1845, with shivering and a red swelling of the left hand and arm. The joints became swollen, red, and painful. The right arm swelled, and was covered with a blush of erysipelas. Purulent pellets were coughed up. The left leg also showed erysipelatous redness. The limbs were placed in splints. On the 8th of November, an issue was established over the right wrist, and, some time later, a second. About the 21st of November the patient began decidedly to amend. The local symptoms subsided, and on December the 31st she was discharged cured. "At first the joints, as one might have expected, were somewhat stiff and useless." This was certainly a very severe case, and strongly reminds us of pyemia, though we do not think that this condition existed, for reasons we cannot now detail. But on what ground does the author lament that he had not given brandy? The first case under brandy went on for about five months, and then left for a "convalescent institution." The second, with 31 pints of brandy, existed for at least two months, and finally there was "considerable impairment of the hand and arm." This third case existed for two months and twenty-five days; the joints being at last somewhat stiff and useless. Thirty-nine days before her discharge "she began decidedly to amend." We find no proofs here of the utility of the alcohol. The cases treated with it, the case which went through the "natural process" without it, do not appear to have been much modified by the pre-

sence or the absence of that agent. But this remark applies more generally than to these illustrations of disease. Is the enormous amount of stimulant administered to such cases and to pyemic patients properly so called, attended with a beneficial result? We will not speak of a *curative* result, in reference at least to the latter; but have we any proof that brandy, a costly item of hospital expenditure, exercises the slightest influence of a favourable nature over the sad course of the malady? Our own observation compels us to answer this question in the negative; for some of the most satisfactory results we have witnessed in allied disorders, such as those under which these three cases laboured, have been obtained when only the most moderate amount of stimulant was accessible,—we mean among the lower classes outside the hospitals.

The next four lectures are devoted to pneumonia and its complications. This disease has been often made the turning-point of medical philosophy, the touchstone of practice. These lectures, therefore, demand the most careful analysis.

The author lays down *in limine* the basis of his practice, which consists in promoting certain excretory functions, especially those of the skin and kidneys; in active stimulation of the skin near the seat of the inflammation; and in upholding the general powers of the system. We were not a little surprised, remembering the preface, to find the author declaring: "I fully recognise and admit the practical value of the distinction between the two classes of pneumonia; the one sthenic, the other asthenic and typhoid;" though the distinction, according to his views, ought to be differently expressed. The local inflammation is said to draw so largely upon the rest of the system, "as to depress the general powers of life." On the other hand, the greatest living authority on this disease, Grissolle, declares that of all moderately grave febrile maladies, pneumonia is one of those which least prostrates the strength<sup>a</sup>.

The following is an analysis of all the cases given by Dr. Todd:—

Case 1: aged 28; single pneumonia of lower lobe; admitted on the third day of disease; amendment on the sixth and seventh days; convalescence on the 14th. No stimulants administered. Treatment—turpentine, stupes, leeches, blisters, aperient medicine, and citrate of ammonia.

Case 2: aged 17; single pleuro-pneumonia of lower lobe; admitted on the third day of disease; amendment on the 6th; confirmed on the seventh day. On the 14th the patient

<sup>a</sup> *Traité de Pathologie interne*, vol. i., p. 356. Fourth Edition.

left the hospital quite well. No stimulants were given. Treatment the same as first case.

Case 3: aged 11; admitted on the fifth day of disease. Single pleuro-pneumonia of lower lobe. Respirations fell from 44 to 30 on the seventh day of disease. Rapid recovery. No stimulants ordered. Treatment essentially the same as before.

Case 4: a girl aged 17; admitted with intense rheumatic fever in November, 1851, having been ill only one day. Double pleuro-pneumonia and endo-pericarditis came on. "In nine days from the commencement of the symptoms, we find a case of double pneumonia; pleurisy and pericarditis had run its course, and the subject of it been conducted safely towards convalescence." On the nineteenth day of the rheumatism "all the joints were free from pain." No stimulants allowed. Alkalies, opium, mild aperients, calomel, blisters, turpentine stupes.

Case 5: aged 20; admitted on the sixth day of the disease in 1851, labouring under acute rheumatism, double pleuro-pneumonia, and endo-pericarditis. Died on the twenty-third day. Wine first given on the twelfth day, and gradually raised from three to eight ounces per diem. Treatment otherwise same as Case 4.

Case 6: aged 11; admitted on the fourth day of disease. Half an ounce of brandy every two hours, ordered on day of admission. Resolution on the ninth day of disease; nearly complete on the eighteenth. On the twentieth day relapse both of fever and local state; on the twenty-third day respirations reduced; but dulness still existed. Recovered. Pneumonia, single.

Case 7: aged 6; admitted apparently on day of attack. Single pneumonia; began to improve about the eighth or ninth day; three days previously two drachms of wine ordered every hour, "the child had been fond of spirits." Reported "convalescent" twenty-one days after admission.

Case 8: aged 36; complicated with typhoid fever; brandy (half an ounce every hour) administered: recovered.

Case 9: a "little" boy, age not given, applied as an out-patient on the third day of disease, but evidently about four or five years old. Single pneumonia; on the ninth day of disease marked amendment; on the tenth he was convalescent. He was treated at first for four days on quarter-grain doses of tartar emetic every four hours. On the day of admission, the seventh day of disease, two drachms of wine ordered every four hours. The next day the pulse came down 20 beats, and the respirations diminished by twelve.

Case 10: aged 48; "not distinctly intemperate;" single

pleuro-pneumonia; admitted on the fifth day of the disease. He was put *at once* upon half an ounce of wine every four hours. On the eighth day he was worse, and was ordered half an ounce of brandy every hour. The patient declined, and died on the eleventh day. The kidneys were unsound.

Case 11: aged 20, "of very intemperate habits;" admitted on the fourth day of the disease. Single pleuro-pneumonia of lower lobe; half an ounce of wine was ordered every third hour on the fifth day; on the sixth he began to sweat, and the respirations and pulse became greatly reduced; on the seventh sweating continued; gradual amendment took place, and he was discharged on the seventeenth day of the disease<sup>a</sup>.

We have now the serious duty of drawing attention to the general and detailed success obtained by Dr. Todd in dealing with this important disease. Here are eleven cases: one was a case of pneumonia occurring in the course of typhoid fever. Of the remaining ten—some simple, others complicated—two died—one in five. Is this success? Scarcely such a failure is to be found recorded. Of the ten cases, nine are below thirty years of age. The French statistics quoted by the author, and so well known, show that the point most influencing the mortality is the age. From fifteen to thirty, in 116 cases, there were eight deaths, scarcely one in fourteen; from thirty to forty, the number of fatal cases amounted to one-seventh of the whole; from forty to fifty, to one-sixth; from fifty to sixty, to one-fifth. Excluding the case of pneumonia in typhoid fever, which recovered, there is one only in this record above thirty, and he was 48. He died.

Another point influencing the mortality is extent of disease. Nine of these cases are examples of single pneumonia, for the most part affecting the lower lobe only; of the two fatal cases, one was single pneumonia.

A third point, exercising a remarkable influence on the result, is the period when they first come under treatment. "The mortality of the disease steadily increases with each succeeding day it has been allowed to run its course uncontrolled. The statistics of Grisolle, referring to the treatment by moderate bleeding and tartar emetic, show that, while the mortality among those seen and treated within the two first days is only one-thirteenth, it rises among those whose treatment does not commence till the eighth day, from one-third to one-half of the whole number"<sup>b</sup>. These cases were placed

<sup>a</sup> It is right to state that the 7th and 8th cases were treated by colleagues of Dr. Todd.

<sup>b</sup> A Practical Treatise on the Diseases of the Lungs, by Dr. Walshe, p. 384. London: 1860. Third Edition.



under treatment at the following periods:—two came on in the hospital while under treatment for other disease; one, apparently, on day of attack; three on third day; two on the fourth day; two on the fifth day; one on the sixth day. The treatment of not one commenced so late as the eighth day, when, according to Grisolle, the mortality approaches that arrived at by Dr. Todd.

But the author alludes to his general results, so as to give us a complete idea of his success, to which he refers with evident gratification. Now all statistical statements in which the minute details are withheld are nearly useless. We can roughly compare, however, one general numerical ratio with another, and so form some sort of notion of a given author's success. How do published statistics support Dr. Todd's views? The total number of cases which occurred under his care in the hospital, from 1840 to 1859, amounted to 78: ten were fatal. We will call it one in eight. Bouillaud's success with the *coup sur coup* bleeding is the same. What a satire on the method so energetically enunciated! The 78 cases are arranged in two periods: the first from 1840 to 1847; the other from 1847 to 1859. The author calls the first "the period of reducing treatment;" the second, "the period of supporting treatment." Twenty-five occurred in the first period; one died in every six. Fifty-three cases occurred in the second period; one in nine died. It is remarkable that the two fatal cases among the eleven we have been analyzing occurred "in the period of supporting treatment;" one in 1851; the other in 1854. But let us take the most favourable period. Six died out of fifty-three; the per-centage of mortality is 11·3. "Skoda, drawing not a drop of blood, employing solely extractum graminis, or a few grains of nitre, and, in some instances, corrosive sublimate, lost three only of 45 patients; but the mean age of the series was only twenty-five and three quarters years" (Walshe, *op. cit.*, p. 384). We, of course, cannot compare the ages of patients not given in detail by Dr. Todd; but the mean age of the eleven analyzed is twenty, the critically favourable age for pneumonia. Varrentrapp's treatment by chloroform, including severe cases treated on other plans, shows a per-centage mortality of 11·5, all but identical with Dr. Todd's most favourable results. The treatment by "diet" in the hands of Dittl of Vienna was attended with a mortality of one in thirteen and a half, or a per-centage of 7·4. Dr. Bennett declares that the mortality under "moderate bleedings" is about one case in seven; but that a treatment directed to further the natural progress of the disease, as I have explained

it, has been in my practice one case in twenty-one two-thirds\*. What is the "natural progress," and what the practice of this latter pathologist? He is in categorical issue with Dr. Todd on the mechanism of the natural process; and his practice consists in either giving no stimulants, or in giving them with *extreme moderation*, such as the author would have considered mere trifling. Wine is Dr. Bennett's favourite stimulus. Brandy occupied the same place in the affections of his eminent London contemporary.

Statistics, then, do not support the opinion that Dr. Todd has opened up a new and better path in the treatment of pneumonia. We must now take a nearer view of the cases analyzed. The first four cases had no stimulants; they all got well; amendment took place on the seventh day in three, and in one of these, on the sixth, improvement was noted. In the remaining case, a mass of internal acute inflammation had run its course in nine days from the commencement of treatment. The fifth case was stimulated on the twelfth day; death took place. The sixth case, a young boy, was intensely stimulated with brandy on the day of admission—the fourth day; resolution occurred on the ninth; not complete on the eighteenth; a relapse on the twentieth day; on the twenty-third, dulness still existed! The seventh case, a young lad, admitted at the beginning of the disorder: on the fifth or sixth day of disease wine ordered every hour; began to improve on the eighth or ninth day; not convalescent until twenty-one days after admission. The eighth is the case complicated with typhoid fever. The ninth, a young boy: treated for four days with tartar-emetic; on the seventh day of disease, two drachms of wine ordered every four hours (an ounce and a half in the twenty-four hours); the next day, marked amendment. The tenth was ordered wine on the fifth day of the disease, brandy on the eighth; he died on the eleventh. The eleventh, of intemperate habits, was ordered four ounces of wine in twenty-four hours on the fifth day of disease; on the sixth he began to sweat; and on the seventeenth day was discharged well. There is but one inference possible from these cases: those who were not stimulated at all did the best, and got well the soonest; those who were moderately stimulated come next in order; those who were greatly stimulated either died, or the "natural process" of cure was much retarded. Two only had brandy: one died; in the other, a child, resolution was not

\* The Principles and Practice of Medicine, p. 642. Second Edition.

complete on the eighteenth day of disease, and on the twentieth a relapse occurred. In this latter survey we exclude the typhoid case, which was also treated with brandy. But, again,—those who did well under stimulants, not only had them in extreme moderation, but showed improvement at such a period—both in reference to the disease, and to the first administration of the stimulant—as to forbid the belief that a beneficial influence was exercised by it. This is particularly to be noticed in the ninth and eleventh cases. On the seventh day of the disease, in the former case, one and a half ounces of wine per diem were ordered; the *next day* the pulse and respirations came down. Four ounces of wine per diem were given on the fifth day in the latter case; the *next day* he began to sweat, and the respirations and pulse came down. Now Dr. Todd admits that about the seventh day there is a natural tendency in the disease to arrive at a crisis.

Let us compare the four cases under twelve years of age. Case 3, without stimulants, showed amendment on the seventh day. Case 9: a minute quantity of wine on the seventh day; showed marked improvement on the eighth day. Case 7—but little older than the last—began to improve on the eighth or ninth day; ordered more than three times as much wine as Case 7, three days previous to improvement. Case 6 had six ounces of brandy per diem; resolution began on the ninth day; not completed on the eighteenth; subsequent relapse—*both in fever and local state.*

But we desire, in a very special manner, to draw attention to the *fourth case* analyzed. It was a case of extraordinary severity: acute rheumatism, double pleuro-pneumonia, and endo-pericarditis co-existed. The result was most creditable to the physician; in nine days the acute internal inflammations had run their course; no stimulants were administered.

Now let us confront Dr. Todd with himself. We have already alluded to the seventh lecture, “on acute internal inflammations,” the basis of which was the case of a woman, aged 19, who suffered from acute rheumatism, double pleuro-pneumonia, and endo-pericarditis. There is a peculiarly triumphant tone about this lecture, so that it attracted great notice at the time of its first publication in another shape. It is, indeed, the cardinal lecture of the volume, delivered in 1857, containing the deliberate expression of the author’s ripest experience. First, two, then four, then six drachms of brandy were given every hour to this patient; about the fifth or sixth day signs of hepatization had disappeared; on the sixteenth day signs of effusion “were at their highest point;” on

the twenty-fourth day the patient was fairly convalescent, just twenty-three days from her admission. She left the hospital, "quite well," forty-four days after admission. Case 4 left the hospital "quite well" on the twenty-ninth day, counting day of admission and day of discharge. Here, then, are two cases of the same sex—nearly of the same age; both treated from the beginning of the disease; one is treated largely with brandy, the other has none; both get well; the first is discharged in forty-four days, the second in twenty-nine. The author alludes to the "rapid recovery" and the "rapid convalescence" of the first; and in set words ascribes this last to the "upholding plan" adopted. To what, then, are to be ascribed the more rapid recovery and the more rapid convalescence of the second? Either the first should have been allowed to pass through the disease without brandy, or the last, on Dr. Todd's principles, was singularly carelessly treated—the brandy being omitted. We must confess that the comparison of these two cases has more strikingly affected our mind than anything else in the book. It indeed speaks most eloquently against the stimulation plan advocated in the seventh lecture.

It is hardly necessary to state that Dr. Todd's aversion to blood-letting in pneumonia is such as almost to preclude its use altogether. We cannot discuss fully this question, but must allude to one statement. "Notwithstanding early bleeding, the lung becomes fully hepatized; nay, I would go so far as to say that, in some cases, it favours hepatization by relaxing the blood-vessels, and permitting a more ready transudation of the liquor sanguinis." This latter averment is certainly opposed to all theory and all experience, and seems to us to approach the impossible. The lung certainly becomes hepatized, notwithstanding bleeding, but neither brandy, expectation, nor diet has a better effect. It does not follow, because the lung becomes hepatized after bleeding, that the loss of blood either promoted the solidifying process or produced mischief. Twenty-nine thirtieths of all cases of pneumonia do pass on into the hepatization stage. For ourselves, we thoroughly agree with Dr. Walshe: "we are simply in a period of reaction from the excesses of the Sangrado school. We have learned from our predecessors the evils of *over-bleeding*, and seem, in my opinion, very much disposed, at the present day, to learn from ourselves the evils of *under-bleeding*."—*Op. cit.*, p. 381.

Our own views of the brandy treatment may easily be inferred from previous remarks, but we cannot state them in more fitting language than the same accomplished physician has done, doubtless in reference to the late King's College Profes-



sor. "The announced success of the treatment by copious libations of brandy appears simply to furnish a fresh illustration (as conversely Bouillaud's alleged triumphs by his *soignées coup sur coup*, in genuine 'typhoid,' Peyerian fever) of the wondrous power of the *vis medicatrix naturæ*"<sup>a</sup>.

The concluding lecture is upon "the therapeutical effects of alcohol," which we will venture to call a misnomer. "Poisonous effects" would have been a more correct term, as the main cause of the lecture was the case of a child, three years old, admitted into the hospital, labouring under the effects of the administration by her mother, at one dose, of 2½ oz. of gin. Convulsions came on, and left hemiplegia. On the day after admission the patient was becoming exhausted, so a teaspoonful of wine was given every second hour. The next day she was worse; on the fifth day she died. The brain was found to be very pale. What is the author's commentary on the case? Here are the last three sentences of this remarkable man's last book:—"Were I to treat such a case again, I would give wine or brandy more freely than was done in this instance, and I would also administer by the rectum quinine with a small quantity of brandy. You will find this often a very useful practice where the powers of life are low, and it *ought not to have been omitted in our little patient's case*. But she showed so little power of reaction, that it is in the highest degree improbable that any further treatment would have been successful." The end! We see here the influence of a ruling idea. Exhaustion, no matter how produced, seemed to the author in nature one and indivisible, and suggests alcohol as a matter of self-evident necessity, even when brought on by alcohol.

Case 91, recorded in this lecture, was a woman, aged 42, who, after drinking hard for two days, without taking food, was attacked with delirium tremens. Opium and brandy were freely administered; but on the seventh day she was so ill as to require restraint. On the eighth day the patient was still violent, in spite of large doses of opium. Under chloroform relief came, but she only "slept soundly" on the fifteenth day. Here, too, the action of the poison which produced the disease was energetically maintained by the physician. Brandy was administered, evidently as the routine remedy, on the day

<sup>a</sup> In alluding to the alcoholic treatment of disease as "*incendiary medication*," Dr. Lasègue says: "Dr. Todd, of regrettable memory, has held, and pretended to prove by practice, that alcoholic drinks are among the most active remedies in inflammatory states: he has not hesitated to prescribe sherry, and even brandy, in high doses to patients attacked with pneumonia and other acute phlegmasiæ; and, at least, we may infer from his essays that alcohol administered below actual toxic doses is less perilous than we supposed."—*Archives Générales de Médecine*, July, 1860, p. 86.

of admission, though there is not a word said of weakness, prostration, and so forth. She was labouring under the representative symptoms of the poisonous effects of alcohol in certain quantity. No one can be conversant with the researches of Peddie, Laycock, and many others, both before and since their time, without concluding that, had this woman been placed in a large room, with two strong nurses, without a doctor, there is a high moral probability that about the fifth day of the disease she would have slept off her debauch.

We will not profess that we have given our readers a complete view of all that is valuable in this book. Far from it. Our object has been to afford them a glance of the scope and tone of the volume. It is filled with sound remarks on the natural history, diagnosis, and detailed management of disease; but we have felt it to be our duty to pass over these, being more or less recognised, and confine our attention to that which specially characterizes the book—its opposition to the generally received maxims relative to the treatment of disease. All will admit that Dr. Todd was the most eminent defender of the school of stimulation, and that his enthusiasm in the cause enabled him to exercise no ordinary influence over his pupils and his brethren. In criticising him, we select the most able and the most distinguished of the school.

But we must not part from the author without the expression of our admiration for his rare devotion to the duties of an hospital teacher, his unswerving honesty of purpose, and for his great gifts both as a physiologist and physician. In the former of these capacities, his valuable services in the cause of science deserve more gratitude than we can here fully give utterance to. Happily, we have in the “*Cyclopædia*” and “*Physiological Anatomy*,” imperishable monuments of his rich endowments and unbounded industry. With all our differences of opinion on points of practice, we can still sorrowfully declare—“*Heu! quanto minus cum aliis versari, quam tui meminisse.*”

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*On Diabetes and its successful Treatment.* By JOHN CAMPLIN, M. D., F. L. S. Second Edition. London: John Churchill. 1860. Small 8vo, pp. 88.

THE above little work has the advantage of having been written by a gentleman who, in his own person, laboured under the formidable disease of which it treats. The author experienced the greatest benefit, both in his own case and in the treatment

of his patients, from the substitution for ordinary bread of bran cakes; the peculiarity of the latter being, that the constituent bran was employed in a state of extremely fine division, in order to prevent any irritating effect upon the bowels. The following is the formula for the preparation of the cakes:—

“Take a sufficient quantity (say a quart) of wheat bran; boil it in two successive waters for a quarter of an hour, each time straining it through a sieve; then wash it well with cold water (on the sieve), until the water runs off perfectly clear; squeeze the bran in a cloth as dry as you can; then spread it thinly on a dish, and place it in a slow oven; if put in at night, let it remain until the morning, when, if perfectly dry and crisp, it will be fit for grinding. The bran thus prepared must be ground in a fine mill, and sifted through a wire sieve of such fineness as to require the use of a brush to pass it through; that which remains in the sieve must be ground again until it becomes quite soft and fine. Take of this bran powder three ounces, three new-laid eggs, one and a half ounces of butter, and about half a pint of milk; mix the eggs with a little of the milk, and warm the butter with the other portion; then stir the whole well together, adding a little nutmeg and ginger, or any other agreeable spice. Bake in small tins (pattipans), which must be well buttered, in a rather quick oven, for about half an hour. The cakes, when baked, should be a little thicker than a captain's biscuit; they may be eaten with meat or cheese for breakfast, dinner, and supper; at tea they require a rather free allowance of butter, or may be eaten with curd or any of the soft cheeses.”

The efficacy of rennet in diabetes is well known. A gentleman in Australia having derived benefit from the use of pepsin, and being unable to procure a further quantity of the remedy, had recourse to an expedient which he thus describes:—“I got three calves' stomachs, had them well cleaned, then made them into thin sausages, well smoked; and after putting them in hot water for fifteen minutes, hung them up all night over the fire in the kitchen. I took about an inch and a half morning and evening with my meals, and in a month diabetes was gone, and I am now perfectly well, weighing 16 stone 3 lbs.—within 6 lbs. of my usual weight. On putting a small piece of sausage in new milk, it coagulated—a proof of its medicinal quality being preserved. The sausages are quite a relish for tea and breakfast.”

The reader will find much information as to the medical and dietetic treatment of diabetes in Dr. Camplin's practical little volume.

*Conférences de Clinique Chirurgicale faites a l'Hotel Dieu pendant l'Année 1858-1859.* Par M. A. C. ROBERT, Chirurgien de l'Hotel Dieu, &c. Paris: Germer Baillière. 1860. 8vo, pp. 542.

THIS book consists of clinical lectures delivered at the Hotel Dieu, in the session 1858-9. The subjects are various enough, and present no attempt at classification. The style is, however, agreeable, and much information of a practical nature is scattered through the volume. We remark with satisfaction a considerable acquaintance with English surgery, though the quotation of opinions is not always exact; and the general phrase of "les Anglais" is often deemed enough.

In dealing with artificial respiration there is a remarkable omission of Marshall Hall's name; and, from all that appears in the book, his method may be unknown to M. Robert. This is the more unaccountable, as Marshall Hall is generally a favourite authority with French surgeons. We have heard his name more frequently in the schools than that of any other Englishman, and, as is well known, he had intimate relations with many of the more eminent Parisians.

The opening lectures of the book are devoted to the full consideration of anæsthesia. The subject is systematically handled, and is full of useful information, but adapted rather for students than for our readers. There are, however, a few points on which we found it not amiss to refresh ourselves, and some of these we shall quote for their benefit. Having drawn attention to the value of anæsthesia in the reduction of luxations complicated with fracture, in the taxis, in spasmodic stricture, and in lithotrity; he shows its use in the diagnosis of tumours in the abdomen. Here we often experience difficulty in determining the nature, or even the existence of a tumour, in consequence of the spasmodic contraction of the abdominal muscles, even in cases where there is no pain. By the use of chloroform this source of error is avoided, and it now strikes us with surprise that we have not more frequently made use of it in doubtful cases. With its importance in determining whether arthralgia is the product of inflammation or of hysteria, we are familiar enough, but it has been little spoken of as a means of detecting malingering, and to this M. Robert draws attention. Speaking of the relief it affords the patient, he gives the following anecdote as illustrative of the effects of fear:—"One day Desault was about to cut a patient for the stone who was very cowardly. He traced the line of his intended



incision on the perineum with his nail; the patient thought the operation was in progress, fainted, and died."

In the lecture on local anæsthesia there is no mention of the vapour of chloroform (as applied by Hardy), nor of the hypodermic injection of sedatives, which is so valuable in neuralgia. There are some sensible remarks on the real danger of anæsthesia, dangers which either exist or are imminent on every occasion of its administration, though skill may render them harmless in the vast majority of cases, and habit may often lead us to forget them entirely. Of the extreme susceptibility of young infants he gives an example. After a hare-lip operation, the child was rendered insensible by the trifling quantity of ether contained in the collodion which was used to cover the wound. He never loses an opportunity of impressing his readers with the necessity of caution, hence it does not surprise us that he recommends an apparatus for inhalation. We are of opinion, however, that his caution is carried to an excess, when it leads him to reject anæsthetics in the operation for ligature of arteries and for hernia. In the latter we have seen the intestine recede spontaneously on the division of so slight a band, that it conveyed to us the impression that much of the ease of reduction was due to the perfect repose of the muscles. His reasons for objecting to its use in hernia are the tediousness of the operation; the debilitating effects of hernia alone on the nervous system, which render it dangerous to superadd the lowering effects of anæsthetic agents, and finally, the trifling pain of the operation. However, he modifies the rigour of his prohibition by allowing the operator to make his incision through the integument while the patient is under the influence of chloroform administered for the taxis. This strikes us very much as a distinction without a difference; and, for ourselves, we should, in the majority of cases, prefer to keep our patient fully chloroformed until the operation was complete, rather than run the risk of disturbance by a premature return to consciousness. We think, too, that he rather overrates the depressing effects of chloroform, and underrates its value in preventing shock.

His objections to its use in ligature of arteries are founded on the value of pain as a means of diagnosis between arteries and nerves in cases where there is a difficulty in ascertaining which may be on the needle; and, secondly, on the danger of sudden spasmodic movements on the part of the patient. There is a certain value in these objections; but not, to our minds, enough to warrant us in rejecting anæsthesia as a rule, though they will lead to caution in the use, and judgment in the selection of fit cases for their use.

We are not satisfied with the chapter which deals with the treatment of syncope produced by chloroform. It ignores Marshall Hall and his method entirely. The best means recommended in it go no further than to draw the tongue forward and to compress the ribs, allowing the natural elasticity of the thoracic parietes to supply the place of the muscles of inspiration, a process that bears as much analogy to the scientific proceeding of Marshall Hall as Watt's primitive steam-engine does to one of Fairbairn's.

We must now pass on to some of the other subjects treated of in this book.

There is a very good practical chapter on fissured anus. This painful affection has attracted the attention of many surgeons; and it is remarkable how, by slow degrees, the treatment supposed to be necessary for its cure has been simplified. Beginning with Boyer, who practised a complete division of the sphincter, we come to Dupuytren, who found it sufficient to deepen the fissure by an incision that divided only a few fibres of that muscle. Most British surgeons follow his practice, and some have obtained credit as its originators. Jobert de Lamballe excises the fissure, a most painful and troublesome operation, and one that requires a long course of subsequent dressing. Blandin tried, by subcutaneous section of the sphincter, to attain the required inaction of that muscle: this, too, is a difficult and painful operation, and is now quite abandoned. Recamier has proposed the forcible dilatation of the sphincter by the fingers or thumb of the operator: this proceeding has been exaggerated by some surgeons, who push the dilatation to the extent of rupturing the muscle. M. Robert shows that this is wholly unnecessary and he makes it evident that it is enough to split the fissure so as to convert it into a fresh wound: the trifling injury to the sphincter keeps it quiet for a few days, and meanwhile the fissure is healed. This proceeding is worth attention: it dispenses with the knife entirely, and so will commend itself to patients; it acts exactly as the operation of Dupuytren does; it has the further advantage of doing away with daily dressings, as it requires no after-treatment whatever, and, if we are to give full credence to M. Robert, it is effectual.

We must here draw our observations to a close, not without regret at the impossibility of giving our readers the benefit of more of the practical hints that are scattered through the volume.

*Mind and Brain; or, the Correlations of Consciousness and Organization, with their application to Philosophy, Zoology, Mental Pathology, and Practice of Medicine.* By THOMAS LAYCOCK, M. D., F. R. C. S. E.; Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Medical Psychology in the University of Edinburgh. Edinburgh: Sutherland and Knox. London: Marshall, Simpkin, and Co. 1860. 2 vols. pp. 404 and 480.

FROM the earliest period of the world, before mankind had even acquired the art of applying appropriate names to the various ideas that floated in their imaginations—when this world itself spread out before their gaze like a vast panorama, must have afforded a series of objects fully calculated to awaken every natural feeling of curiosity, because they were then so little understood, as far as their real and intrinsic natures were concerned; when rational science was in its infancy, and philosophy had imposed no rules to guide the anxious inquirer in his search after truth; when the eye might embrace in their generality, but had no means of comprehending in their absolute strictness, the essential characters of the varied scene in which they had been placed by Providence to enact so distinguished a part;—even then it would appear that man had already commenced his busy work of investigation, labouring to unravel that great and mighty mystery presented by the mind, which, as the regulating principle of our being, leads us to think, will, and act; or, what is still more striking, endues us with the strange faculty of pondering over and analyzing its own immediate attributes, with the influence that each may exercise in the production of cause and effect. But whilst we recognise the existence of this innate thinking principle as a broad and patulous fact, we are at the same time driven to acknowledge that no one has hitherto been able to point out its exact seat, or even pretend to conjecture the actual position which it occupies in the animal economy. Who can undertake to account for the manner in which its impulses are produced, or how they are led to follow each other in wave after wave, like the waters of the troubled ocean? Our knowledge on this subject may be summed up in a very few words. We merely know that a something which we term, by universal consent, the mind, actually exists; that experience has made us aware of many, if not the whole of its leading characters; and, upon those last, philosophers, in their successive generations, have built laws, founded axioms, and framed definitions; but, further than this, we find ourselves nearly in the same position

as that occupied by our forefathers some thousands of years back,—still dark on the one great leading point, without a single glimmering of light to cheer us on our path, or lead us to hope that the darkness which envelopes our understanding in this respect will ultimately be dispelled. True it is, that a purer system of physiology, and a more intimate acquaintance with the cognate sciences, has unveiled many a fact that once appeared to be buried in a state of almost hopeless obscurity, and the ascertained lesions of particular sections of the human system has pointed out to us certain affinities which would seem to throw a shadowy light on this complex and intricate subject; but still they are not of such a nature, or so accurate in their character, as to warrant a full amount of reliance being placed on the deductions drawn from them.

Holding, as it ever must, a paramount place in human existence, it should be a matter of no surprise that the mind, with its various qualities, should always form a subject of speculative inquiry to the philosopher toiling to discover and methodize the agencies by which it is at first actuated, and afterwards directed and governed. The success, however, that may have attended those repeated attempts is, at least, questionable, and it may be fairly doubted whether our knowledge of psychology as a science has advanced at all in the same ratio as the number of volumes that have been recently penned on this topic might lead us naturally to expect. Speaking with all proper candour, we think that it has rather retrograded, and the conviction has often struck us forcibly, that the morbid and mistaken views that have been advocated and maintained by those who are considered to be high and unquestionable authorities on matters of this nature, have led most assuredly to results melancholy, and, in too many instances, deplorably tragical. Men will write—some through the sheer want of something else to do—others to gratify an inordinate self-love, which, in spite of every effort to conceal it, will peep out unconsciously through almost every page that they compose; while many are actuated by the sole and pure desire of endeavouring to improve the moral condition of their fellow-beings, and raising them still higher in the scale of social improvement; but still, all should be extremely cautious in dealing with subjects of an abstruse and dangerous tendency, sedulously to avoid advancing doctrines which may be seized on by those of weaker judgment, and perhaps wrested to purposes far different from what was their original intention. That there are too many grounds to show that this perversion will sometimes occur, has unfortunately been manifested in several events of a very recent date,



and the records of our courts of law will in later years exhibit many and melancholy examples of the psychological mania pushed to excess to screen the transgressor from the punishment he has so richly merited; and, what is still worse, to hold out to others an inducement to a similar offence, by the prospect of the immunity that they have observed to follow acts that clearly deserved a far different fate. The fact of the matter would appear to be, that the pseudo-philosophers of the present day are by far too fond of looking to extreme causes in the commission of any unlawful act, in explanation of simply ordinary cases, and to urge, in extenuation of that act, a deficiency of mental capacity in that one particular respect,—a most dangerous doctrine in the present constitution of society, and one calculated to unhinge the very elements on which it rests, while at the same time it may recoil at any moment on the heads of its abettors, affording, as it does, a ready pretext for crime, and, what is of still greater importance, a readier mode of evading its consequences. In matters of this kind it should always be remembered that a precedent, when once established, be it for right or for wrong, is always most difficult to be overstepped. Like the finger-post to the traveller, it stands prominently forth to guide and direct successive generations in the several relations of life, and, whether it be for good or for evil, there it remains, not invariably achieving the object for which it was at first erected. Circumstances that in one case might have rendered it purely exceptionable, will in a succeeding one be totally overlooked, and the naked fact be alone regarded, apart from any collateral evidence that might tend to modify its nature, and thus the ingenuity of man will be led to torture what was originally intended to be a great boon into what may be regarded as its very opposite.

In the volumes that are at present lying before us, "The Mind and Brain; or, the Correlations of Consciousness," we feel that Dr. Laycock has done very good service indeed to mankind by instilling by actual example the mode in which this subject ought to be handled, and, in fact, rendered of benefit to all, by the inculcation of views at once sound and philosophical. He has practically shown that the interest can always be sufficiently kept alive without any undue appeal to our morbid sensibilities, while, in his attempt to methodize what is almost universally admitted to be true with respect to the doctrines which it is his object to elucidate and impress, he has displayed an amount of reasoning power, and a depth of information most highly creditable, in whatever light it may be regarded. Still more—unlike too many others who have

devoted themselves to those pursuits of metaphysical research—he has completely avoided that obscurity of diction which veils in a mass of words the tenor of the sentiments which it is their object to convey; his thoughts on the contrary, being always clear and easy to the comprehension of all. In his preliminary dissertation on method, with which his work commences, we have a perfect model of pure and classic composition, replete with observations calculated to guide and direct the inquirer in his search after truth, by pointing out the true and legitimate path by which that object is only to be attained; and his precepts in this respect appear to be so truly admirable that we are tempted to hazard a brief quotation as a proof of their excellence. After instilling the great principle that in investigations of this nature, the laws of action peculiar to the brain and nervous system ought to be the chiefest ends to which our inquiries should be directed, he proceeds to say:—

“It must not be forgotten, however, that discipline and a method should be mainly directed to acquiring and applying a knowledge of the physiology of the brain, if the object aimed at be to develop a practical science of mind. 1. The student, to this end, must be ever on the watch to counteract the insidious operation of preconceived notions and prejudices, as the most important of the obstacles to a proper knowledge of the nature of his instrument. 2. He must thoroughly satisfy himself of the inestimable importance of the science itself, as that the final object of which is to enable him to know and exercise dominion over himself and others. With such convictions he will not readily be persuaded that he need give less time and labour to the knowledge of his own nature than he is prepared to devote to any other branch of science; while he is ready to devote years to mathematics, languages, and the like, with a conviction that earnest toil is the only means to success, he should be prepared to view mental science in at least a similar light.

“It is manifest, also, from these considerations, that the student should be prepared by previous study, and a sufficient mental training, for the task before him. Thus, since he has to combine physiology and philosophy to practical ends, a competent knowledge of the two great departments of knowledge should be an object of necessary attainment. But by a competent knowledge of philosophy I do not mean more than may be acquired by the careful study of two or three standard works on psychology and metaphysics, together with a fair knowledge of elementary logic. By a competent knowledge of physiology I mean only a general knowledge of vital structures and functions, as seen in both the animal and vegetable kingdoms. To this end books may help much; but observation and anatomical research by the aid of books, or, better still, a teacher, are absolutely necessary. A certain general knowledge of natural history, including zoology and botany, must be also possessed by the student.

“Now, although the student of mental science must needs employ the methods of scientific research in general, the subject-matter of his science is, in its relation to himself, wholly different from the subject-matter of other sciences. The very thing he has to examine is that by which he examines; the organ whose laws and processes he has to determine is that by which he is enabled to observe and conclude. His brain is both the object and instrument of his researches. Hence all the aims and methods of mental science have a twofold relation to the brain and nervous system: firstly, as an instrument of research; secondly, as the instrument of relation whereby the man is brought as a rational being into connexion with the external world, and the exponent of all those desires and motives which make him what he is. It is this twofold relation which has made the study of mental science so difficult, in so much as the two classes of phenomena are inextricably intermingled; and it is thus that many have been led to the opinion that mental science must necessarily be always too imperfect for any uses as an applied science; that the phenomena it investigates are too obscure and complex to be brought under general principles, or, if brought under such principles, that they are far too profound and too general for application to the multitudinous and infinitely varying changes in the minds of men—or, at least, that common minds can never grasp them for daily use. This doctrine is undeniably true of those *à priori* principles which a one-sided philosophy offers us as the results of meditation and the logical art, to the exclusion of observation and experience of the subject-matter, the brain, but undeniably inapplicable to those practical principles which are reached by the twofold method described. It would be strange, indeed, if it were otherwise, and there were no simple and available principles of a science of human nature, when the whole fabric of human society is held together by the operation of those principles, and when every man, woman, and child in it is of necessity, and instinctively, a practical psychologist. For surely (to mention but one illustration) that estimate of a man’s character, and of his probable modes of thought and action, which is habitually deduced from the features, gestures, tones of voice, race, language, accent, expression of countenance, and the like, is virtually nothing more than an empirical psychology, however informal it may be. And when the generalizations which can thus be made respecting the feelings and actions of mankind are reduced to general propositions, they became the empirical laws of a practical science of physiognomy.

“Thus prepared, the student will be able to carry on the twofold process of observation and induction already referred to, without that complexity and difficulty which is otherwise experienced. All his observations can be arranged, accordingly as they are intended to develop a knowledge of the brain as an instrument of research—i. e., of its physiology proper; or as they are intended to apply to a knowledge of human nature—i. e., as facts of mental science. To both these ends the student can either observe and



experiment upon his own states of consciousness in their corporeal relations, or upon those of other living things about him. By the former method he will soon acquire the habit of detecting the necessary relations which corporeal changes, from whatever cause arising, bear to his mental states, and thus gain a large amount of practical self-knowledge; by similar observations on others, he will in like manner gain a large amount of practical knowledge of mankind. Children and the insane are, however, the best subjects for study, but especially children, as the corporeal and mental phenomena they manifest are less complex in them than in adults."

In the following extract Dr. Laycock has drawn a faithful and graphic picture of the rise, maturation, and gradual decay of nations, and has shown that those results are produced by no pre-ordained law, but are due simply to causes that evidently depend upon the altered condition of circumstances, under which they at the several periods exist—one stage, in fact, inducing the other, until the final one at length arrives, and closes the scene. It is active opposition alone, and a well-directed competition, that can keep alive and retain in their full vigour the qualities essential to a nation's success. With the moment of repletion, as he so aptly terms it, comes also the moment of danger. The restless mind must have something to employ itself upon, or it will relapse into pursuits at variance with its further development, or, what is still more melancholy, sink into a condition of apathetic indifference, from which it will be seldom again aroused. Look even to our own times: have they not witnessed the introduction of the Turkish Bath with all the enervating effects that it must ultimately produce? No doubt can be entertained but in theory, and in many particular cases, it must prove eminently useful, but in the end it will be abused, and the pages of history point out, in a manner that admits of no contradiction, the part that it has played in the overthrow of whole communities. Extreme hygienic measures will always argue an extreme degree of civilization, and the latter term as surely conveys the idea of luxury, carried to an unwarrantable extent, wholly at variance with a pure and wholesome condition of society.

The annals of the world have taught us this lesson, and experience has confirmed the fact, that the hours of their greatest prosperity are always attended with the greatest danger to nations, and they have invariably attained the zenith of their highest glory in the moments of their trial and tribulation. Napoleon, who holds the most prominent place in the records of later times, and who was adopted by a vast and powerful people as their type and representative, was invincible as long



as there was a sufficiency of opposition offered to his purposes to call forth all that striking energy of character by which he was so wonderfully distinguished; but as that opposition was gradually, and step by step removed, the hero of the Parisian sections surrendered himself a willing prey to ease and luxury, and ultimately fell a victim to an erroneous conception, sought to be executed on false premises, for it really was no more than a sheer want of reflection, inducing a mistaken calculation of the physical resources at his disposal, that led him to undertake the fatal step of the march to Moscow, and hence his rapid downfall. In his first grand struggle for place and power he never would have overlooked the principal danger of the project he was about to embark in—a conflict with the elements of nature herself; but it should be remembered that he was then in the full vigour of youth, with mind and body marked by a healthy tone, and co-operating with each other, and that he had not as yet acquired the habit of sketching out a gigantic plan of operations under the enervating inspiration of the warm bath.

“Passing from these great questions in sociology, which are to be solved by a knowledge of the laws of action of external agents on the human body, and through it on the mind, we reach a still more complex problem in the growth and maintenance of the social state. The striking analogies observable between the development of individual organisms and species have been applied to the development of nations or large societies of men; and the rise and fall of empires have been suspected to be due to the operation of laws of growth, organisation, and decline, analogous to the laws of development, organisation, and decline manifested in the individual man. So that, although man may have attained to that full knowledge of the influence of external circumstances on his vital and mental states, and therewith to the ability to subdue external nature to his purposes, known as civilisation; yet, without a knowledge of those more hidden laws by which society culminates and declines, civilisation and all its advantages will ever be in danger of retrograding, and even disappearing. History has so often indicated this to be the cycle of events with empires, that the philosophic historian adopts it as a general principle of politics. Republics or monarchies grow up through a youth of energetic action, vigorous inquiry, and brilliant fancy. An adult prime of masculine vigour is characterised by national wealth, comfort, and solid development of the intellect. Then the age of repletion arrives, with suspension of mental and bodily activity, and with gratification of the appetites; a palsy benumbs the imagination, scepticism vexes the intellect, and an admiration of the past stimulates to fixedness and hero-worship. To this finally succeeds old age or national decay, subjugation to more vigorous or

younger nationalities, and revolutions in art, science, religion, if not subversion of them all. Such changes are more directly due to mental influences, less directly to physical or external, and are often modified by primary or inherent qualities, or groups of qualities, of the race,—themselves originated amidst climatic conditions in a far distant time, and transmitted from generation to generation with unwavering steadiness amidst all the variations in external circumstances.

“It is not, however, in the influence of external circumstances on man exclusively of the influence of mind, nor in the influence of mind exclusively of the influence of external circumstances, that a practical science of mind finds its proper sphere. This is rather to be found in the reciprocal influences of the two classes of agents. To reduce the operation of these to general expressions, capable of application deductively to the wants of mankind, is the true end of practical philosophy, as well as of an all-comprehensive mental science. In this sense, indeed, the two terms are synonymous, and in none other; for a philosophy which excludes the whole of physics and of physiology from its inquiries, cannot be practical or scientific in any proper sense of the terms. To this conclusion, in fact, the most practical, and, at the same time, most philosophical thinkers of the day seem to have come.

“Amongst the many illustrations of these views which might be noticed, reference need only be made to one of the modes in which the important influence of agriculture is manifest in human society. The more material things which minister to the life of plants subserve also the life of animals and man. The laws of life are therefore common to both forms of life, as regards these material things. Now, Divine Providence has so arranged the order of events, that whatever develops the growth of such plants as serve for the food of man, or of the animals upon which he feeds, adds to human welfare, while, at the same time, it perfects vegetable life on the earth. So that where man settles, and labours, and multiplies, there the face of nature assumes more beauty; and man himself, contending more effectually with the physical influences to which, in common with all other living things, he is subject, becomes more and more developed in all the characteristics of humanity. In other words, civilisation flourishes. For the continued progress of mankind in this development, or, at least, for the permanence of civilisation, so far as regards food, one thing only is necessary—namely, to follow the order of events laid down by Divine Providence; which is, that the material constituents of animal and vegetable organisms shall pass from one to the other in a cycle of continual change and alternation. These changes take place in the air, earth, and water. The carbon given off as carbonic acid to the air by animals is taken up by plants, and fixed again as carbon; the phosphoric, silicic, sulphuric, and other acids, together with alkaline earths and salts, pass off with the animal excretions, and, when returned to the soil, maintain in vigour the vital powers

of vegetables destined to be the food of man and animals. Now, so long as this cycle of change is kept up, both forms of life flourish; but if the fixed mineral constituents that are constantly taken from the soil by plants be not returned to the soil, it at last becomes so defective in these constituents that vegetable life is no longer vigorous; in other words, the soil is exhausted, and production of food for man and animals ceases. Upon this exhaustion of the soil there necessarily follows, therefore, with the greater difficulty in the supply of food, not only a hindrance to the development of society, but a retrocession; and thus flourishing and civilized communities may slowly but surely decay, from the neglect of this fundamental law of cyclical interchange between animal and vegetable organism.

“Baron von Liebig has very lucidly illustrated this application of one of the fundamental laws of life and organization to political economy, and shown the danger impending over Great Britain in this respect, by examples drawn from the history of ancient Rome and Italy.

“Amongst modern instances of national disaster thus induced, France at the close of the last century, and Ireland in this present, might be mentioned. In France, the full sweep of revolution arose from and was dependent on its defective agriculture; and if the spoliation and subjugation of that country did not close the series of national events, it was because the comity of civilised nations ruled otherwise. Ireland, too, was only preserved from famine by the modern appliances of commerce, developed at the cost of millions by the rest of the United Kingdom. If she had been a really independent nation—i. e., both independent and self-dependent—nothing, it seems probable, could have saved her from utter extinction but subjugation by a foreign power.”

In glancing our eye over the several pages of this work, for we pretend to do nothing more, we find in the article on metaphysics the following curious distinction drawn between the two trite and common-place expressions, “memory and recollection,” which are so generally regarded, and, in fact, employed as identical in their signification:—

“Consciousness is identified with memory and recollection, or the knowledge of the past, both popularly and by philosophers. Thus, when a person means to say that I do not recollect an event, he will say, It is not in my memory; I am not conscious of it; or, I am not aware that it happened.

“Memory and recollection are two materially related faculties, by which past states of existence are brought into relation with the present and anticipations of the future. Sir William Hamilton distinguishes memory as the retentive or conservative faculty; recollection as the reproductive. ‘Memory,’ he says, ‘strictly so denominated, is the power of retaining knowledge in the mind, but out of consciousness: I say retaining knowledge in the mind, but out of

consciousness; for to bring the *retentum* out of memory into consciousness, is the function of a totally different faculty.' 'If we are capable of knowledge, it is not enough that we possess a faculty of acquiring, and a faculty of retaining it in the mind, but out of consciousness; we must further be endowed with a faculty of recalling it out of unconsciousness into consciousness; in short, a reproductive power. This reproductive faculty is governed by the laws which regulate the succession of our thoughts—the laws, as they are called, of mental association.' 'By *reproduction*, it should be observed that I strictly mean the process of recovering the absent thought from unconsciousness, and not its representation in consciousness,' &c. Here we have the word 'unconsciousness' used in a mode which seems to contradict the doctrine that the mind is never unconscious; for if it can be unconscious as regards all previous states of existence, why (*mutatis mutandis*) cannot it be unconscious as regards the present? Memory is, however, like attention in its nature; it is a faculty so intimately associated with the operation of the vital forces, that no man doubts its entire dependence upon corporeal states. We may doubt as to absolute unconsciousness, but there can be no doubt as to the absolute loss of memory and the power of reminiscence; and it is equally certain that that loss is wholly due to morbid changes in the nervous system—i. e., in the encephalon."

We conceive that a far better illustration of the distinction that actually exists between those two terms may be deduced, not from the examples drawn from the ordinary routine of every-day life, but rather from those caused by keen mental anguish, where a blow has been struck at the very root of our happiness, and that in a part where we were peculiarly sensitive to such an impression. In a case of this description it will require no mental effort to recall the recollection of the anguish that has thrown a chill over the whole tone of our existence, for it will unconsciously arise to mar our happiness, even at those moments when least expected, and, like an unwelcome guest, intrude its ungrateful presence on our privacy at all times, and under all circumstances. It becomes, in fact, completely identified with our very being, poisoning, like some mephitic vapour, the well-springs of our life. No effort, no struggle on our parts can shake off the dominion it has acquired, and both our thoughts and actions are subservient to a control which it exercises with no sparing hand. It is enshrined in our breasts in all the bitterness of its intensity, rendered still more intolerable by the efforts that we may make to veil its presence from the eye of vulgar gaze. This is memory deeply ingrafted, carved into the very inmost recesses of the soul—identified with existence—a part and parcel of ourselves—in-



terwoven, more or less inseparably, with all our associations; unlike recollection, it stands in need of no mental effort to review that dream of other days, which, by the lapse of time, may, perhaps, have faded away into almost utter oblivion, until recalled again to the imagination by some accidental occurrence, and then probably only with the greatest difficulty. In short, memory may be regarded as the imperishable monument that mind has erected for itself as the record of its own reminiscences; while recollection may be considered the picture whose outline and tints fading beneath the hand of time, require a certain combination of several of the mental faculties to resuscitate and restore to what was meant to be their original intention.

It is a common remark, and will be so, we believe, for all time, that philosophers, in their zeal and eagerness to unravel and account for, according to the principles of reason, the mode in which the machinery of life is vivified and regulated, too often neglect altogether the consideration of that Great First Cause which originally animated and bestowed upon the objects of creation those several attributes by which each is so especially distinguished. It should, however, be always borne strictly in mind that they do this, in the great majority of instances, not through any intention of disrespect or irreverence to the acknowledged Creator of all things, but simply in obedience to a rule that they have marked out to themselves of confining themselves closely to the laws of physiological reasoning, as suggested to them by the consideration of the several striking characteristics of the objects that at the moment may engage their attention. The mechanism of the steam-engine, with the nicety of the principles by which its power is generated and controlled, may, it will be admitted, form a subject of criticism and examination, without any reference whatever to its first inventor; but this very silence and apparent slight will never be attributed to a want of proper appreciation of the merit to which he is so fairly entitled, for his highest reward must always consist in the eager curiosity and critical admiration displayed by his fellow-beings in pondering over the stupendous production of his hands. And so it is the case with that higher Power who, as the first and sole exciting cause, has studded the earth that we inhabit with those myriads of objects, infinitely more curious in their design and mechanism than the proudest of man's production, endowed with a vivifying and reproductive principle that none can copy or imitate, standing as far above human comprehension as the heavens are above the earth. As sentient beings, we are conscious of

existence, but, at the same time, we actually know as little of the real essence of which it consists as we do, apart from scriptural grounds, of what becomes of it after death. The doctrine of utter annihilation can never solve the latter part of the problem, nor yet the diffusion of the vital principle into the void of infinite space, to be mingled with the coarser and less refined elements of nature, for both ideas are equally repugnant to our better feelings and judgment, to find many supporters or abettors who can argue, with any reliable appearance of reason, in favour of either termination. Dr. Laycock has, in this instance, we think, truly shown that we must principally rely for the truth of a future state of existence on that intuitive feeling that would seem to exist in almost every nation of mankind, all tending to the same ultimate point, though the paths that lead to it may be essentially different in their character. Moreover, this argument might be still further fortified by that innate and insatiable craving after posthumous fame and notoriety—a feeling so universally implanted in the human mind, and so diametrically opposed to the conception that might be formed of a being finite in his essentialities, as we might be led to presume by yielding to the doctrine of annihilation. No doubt, this latter view has been consistently maintained by many whose intellect has ranged far and far above that of the average gauge of mankind; but still, even on this, too much reliance ought not to be placed, for the fact is notorious to every one, that a certain degree of weakness on one point is by no means incompatible with the possession of the most unlimited amount of mental capacity on every other. In fact, in many instances it is an undoubted mark of genius:—

“ But the important question arises, Is this idea of a future state a true teleiotic idea? Is there a future life for man in which a higher differentiation of his powers will take place? In attempting to solve this question, we may start from the fact that there is no race of men, at all advanced beyond the lowest barbarism, which has not an intuition of a life after death. And this has operated as a law of man's nature in all past ages; for whether we examine the ancient Indian, Egyptian, Grecian, or Roman mythologies, we find this institution is the foundation of them all alike. There is an apparent exception amongst civilized nations in the omission of the doctrine from the Mosaic or Hebrew system of religion; for it is a remarkable circumstance, that throughout the five books of Moses positive mention is nowhere made of a future state of reward and punishment. All the promises and threatenings of the code have exclusive reference to future national blessings and disasters on earth. It cannot be conceived possible, however, that Moses or the

people he governed were ignorant of the views of the Egyptians—amongst whom they had lived and been educated—as to a future state; for these were not only of a most definite character, but were interwoven with the most solemn of their religious rites;—namely, the funeral. Besides, that the doctrine was well known to the Jews, is shown by the fact that, at a later period, the opposing sects of the Sadducees and the Pharisees represented the difference of opinion as to a future life subsequently current amongst that people.

“An exception to the universality of an intuition of a future state amongst all mankind is found in the apparent defect of any such doctrine amongst unlettered and barbarous men, like the Australian aborigines. It is difficult to say conclusively that such an idea is wanting amongst them, because the meaning of abstract terms is not of easy interpretation, even in an old language like the Chinese; but, fully granting the fact, it cannot be denied that the intuition of God and of the future state are potentially a part of their mental endowments, and that, therefore, these undeveloped men are capable, at least, of feeling the intuition, and perceiving its truth, so soon as their minds are subjected to the appropriate stimuli from without—i. e. developed into higher powers. Now this potentiality of intuitional belief correlates the potentiality of archetypal development; so that, for the same reason that the ape cannot be developed into a man, for the same reason it cannot comprehend God, or union with him in a future state of existence.

“Nor is it any argument against the probability of a future life to individual man, that we cannot conceive how man can exist in another world, nor what that world may be. Such notions are only possible as the edicts of experience; they are the results of the development of intuitions, by affinitive impressions derived from external phenomena. Consequently, as man's present organization is adapted exclusively to the experience of phenomena of terrestrial things, he cannot pass beyond them in knowledge; he can only imagine, and his imaginations will all be of the earth, and earthly.

“It follows, then, that although man cannot, from the constitution of his nature, comprehend the Infinity, nor understand how he can continue to exist, and know and love God, in a future life; yet he has intuitions which are evidences as conclusive that there is a God, and another life after the grave, as his personal intuitions of his existence at present, of his previous existence in past time, and of his continued existence into the next moment, are conclusive as to his personal identity. And so the highest, and greatest, and least, of the intuitive beliefs of his intellect combine in unity with the first, and simplest, and lowest.

“Finally, it is in the capabilities of man's nature as to the future in which the great difference between him and his fellow-creatures, the lower animals, lies. They do not appear to be capable of a knowledge of God, or of a future beyond the grave. The gorilla—the ape nearest man in development—is, probably, as widely apart from man in this respect as the lowest vertebrate. In other

words, it is not the corporeal form which should assign man his place in creation, but his mind. What this is in its relations to God we have already discussed, and concluded, as a question of zoological Ontology, that 'We are his offspring.' "

We will conclude our notice of this book by one other extract, remarkable for its attempt to account for the difference that is observed to exist in the mental capacity of various individuals, with the causes on which it may be supposed rationally to depend. It is another of those knotty problems in the human organization most difficult of positive solution, for, with every fair extraneous manifestation of superior intellect, we will oftentimes find a lamentable deficiency in this respect, the more marked because falling so far below all our preconceived ideas on this subject. The converse of the proposition will be also found to hold good, stupendous and undoubted talent repeatedly acknowledging as its resting-place an external configuration scarcely commensurate with the picture that the imagination may have drawn for itself of its acknowledged possessor.

The views, as advanced by the author, must unquestionably exercise a very marked influence in explanation of the fact at present under discussion; but they can never be regarded as a standard rule, for the exceptions are too numerous to permit its unqualified adoption, even in the majority of cases. It has repeatedly struck us that this diversity in the scale of intellectual capacity, so observable amongst a given number of individuals, may be attributed, not to the many causes that have hitherto been laid down, but rather to others, so simple in their nature, that they have either been altogether overlooked, or not so strongly insisted on as their importance would appear to deserve. If pathology will pass current for the value of the paper on which its lessons are inscribed—it teaches us one great fact, to which few will be found to demur, that certain lesions of the brain are invariably attended with a series of consequences, that, from their frequency and regularity, admit of no dispute; and can we for a moment deny that, in the earlier periods of infancy, this delicate organ of thought is by far more susceptible of injury from its comparative want of protection, and the softened condition of its structure, than in more advanced years? Who, then, could describe the positive amount of harm that may be inflicted on this organ of thought and consciousness at such a critical moment by the coarse touch of the hireling hand—what parts essential to its future healthy state may be compressed, or actually broken up—destroying a link in that great chain so necessary to the association of ideas!



We have simply to observe the unnatural positions in which the child is thrown hour after hour during the day; and to listen to its screams, and watch its struggles, as nature intuitively battles against this gross and unjustifiable treatment, to feel what must be the inevitable result. While we boast of our rapid advance in the path of civilization, we in this instance, at least, display a lamentable ignorance of the leading principles of common sense, which ought to guide us in a better course. Reform is necessary in this particular; and when this reform has taken place, then, and not till then, will Dr. Laycock's views have some real foundation to rest upon.

“*Differences in the Quality of Brain.*—There is a great difference in individuals as to the quality of their brains, so that men with large brains are by no means necessarily distinguished for their mental powers, as compared with men with smaller brains. Recent researches have enabled us to comprehend the grounds of this difference. We have seen that all mental states are the results of the transmission of vital forces according to a law of design operative in the substratum of mind. Hence the amount of force transmitted will determine the intensity of the vital and correlative mental energies. Now this must necessarily differ in amount, from several causes. First, the condition of the blood and blood-corpuscles, as to their number and their vital forces, varies much in individuals. In strumous lymphatic temperaments, they are fewer in number and less coloured than in the sanguine. Hence, *cæteris paribus*, the latter will have a more active brain than the former, and this is matter of popular observation. The word ‘sanguine,’ indeed, is applied to denote the mental character of a man who, feeling intuitively the vigour of his forces, sees no difficulties in the way of attaining his projects. Besides, there is not only in the sanguine man a richer blood, but also a larger development of lung, and of heart and bloodvessels, with greater motor power and vital activity, so that a larger amount of force is both acquired and expended in a given time. The size of lungs is certainly of great importance to mental activity. It is not improbable, indeed, that a large brain in a person of a lymphatic temperament, if conjoined with especially small lungs and a large obese body, may itself be a cause of mental hebetude; for the same amount of force, which would give an average mental power and corporeal vigour to a smaller brain and smaller body, is lost, as it were, in the larger.

“Further, there are facts which tend to prove that there are differences in the material substratum of individuals, such that the rate of conduct of the transeunt forces differs. Professor Helmholtz, of Königsberg, who made a series of experimental observations to determine this point, found that in most men the impression which causes a sensation passes to the brain at the rate of 180 feet per second; that under the most favourable circumstances one-tenth

of a second was required to transmit a volition to a motor nerve, but that the rate of speed differs much in individuals, or even in the same individual under different circumstances; and that 1-100th of a second elapses after the movement is willed before the muscle contracts. The whole process requires from one-fourth to one-fifth of a second. Now, in diseased states of the brain (as in the last stages of general paralysis), we find this velocity of transmission of force greatly diminished, so that in some instances the whole process will occupy several minutes. Slow transmission is, indeed, the most common characteristic of old age."

Here we must pause, and it is with deep regret that we close those volumes, not through any dearth, however, of subject matter, for each page, teeming with reflections of a high and lofty character, would afford ample scope for a careful and critical analysis. In conclusion, we trust that it will meet with all that success which its real excellence so richly merits, surpassing, as it does, every work of a similar nature that has for several years past issued from the press on the same subject.

*Traité des Applications de L'Électricité à la thérapeutique Médicale et Chirurgicale.* Par A. BECQUEREL. Avec 15 figures intercalées dans le texte. Deuxième Édition, revue et considérablement augmentée. Paris: Germer Baillière, 1860. 8vo, pp. 550.

*A Treatise on the Uses of Electricity in the Treatment of Medical and Surgical Disease.* By A. BECQUEREL. With fifteen Plates inserted in the text. Second Edition, revised and considerably increased. Paris: Germer Baillière, 1860. 8vo, pp. 550.

*De la Galvanisation par Influence appliquée au traitement des déviations de la colonne Vertébral, des maladies de la Poitrine, des abaissements de l'Utérus, &c.* Par le DOCTEUR SEILER. Paris: J.-B. Baillière et Fils. 1860. 8vo, pp. 157.

*On Galvanization by Influence applied to the treatment of Curvatures of the Vertebral Column, of Diseases of the Chest, of Prolapsus of the Uterus, &c.* By DR. SEILER. Paris, J. B. Baillière and Son. 1860. 8vo, pp. 557.

WERE we to judge by the number of the works amongst our continental neighbours devoted to the study of electrical therapeutics, and by the character of their authors, we should be irresistibly led to the conclusion, that an all-powerful thera-

peutical agent is much neglected and undervalued amongst us British practitioners, and that in this respect at least we are immeasurably behind our more zealous continental physicians. The names of Duchenne, De la Rive, Remak, Ribes, Guérard, and that of the subject of these remarks, M. Becquerel, with many others, present a brilliant *ensemble* of illustrious physicians, who have more or less identified their names with this subject, and, were it only on this account, alone demand at our hands more than a passing notice of the claims advanced by them for this agent in the treatment of disease.

The name of Becquerel, the distinguished physician to the Hôpital de la Pitié, is sufficient guarantee to us that all that he advances as the result of his own experience is based on fact; and though on some points we may be permitted to doubt the truth of his theories,—especially when those are opposed to the result of experiments conducted by men of equally distinguished attainments in this special department of therapeutics—yet we shall do so with a respect due to the zeal, ability, and acquirements of one who has undoubted claims on our admiration and gratitude, and from even whose theories we dissent with considerable diffidence and great reluctance.

Our first object, however, shall be to point out to our readers the method adopted by M. Becquerel in the arrangement of his Treatise, which can be briefly summed up as follows. The work opens with a preliminary history of the literature of his subject, in which full justice is done to the labours of his own countrymen, but from the perusal of which the reader, otherwise uninformed, would rise with the conviction that elsewhere nothing has been done for the subject. How true this statement is, may be inferred when, amongst a host of other omissions, we inform our readers, that in M. Becquerel's bibliographical record, the name of Augustus de la Rive, the distinguished Professor at Geneva, whose monogram is without doubt the most important one ever published in any language on the entire subject of electricity, is not even once mentioned; one name however, is mentioned, and with marked approval, which we are the more pleased at, as endorsing the favourable opinion we expressed of the work in question, in our Number for November, 1859. In speaking of it, M. Becquerel thus expresses himself:—"The last work which has appeared in London upon electricity applied to therapeutics, is that of Dr. Althaus. It contains interesting facts, and is perfectly up to the present position of the science. I cannot, then, too strongly recommend its perusal. I shall put it under contribution in the third part of *the application of Electricity to Therapeutics*."

The subsequent portion of his work is divided into three parts, in the first of which the various static and dynamic apparatus are described; and subsequently, in an Appendix, we have a description, with a plate, of a new electro-magnetic apparatus by M. Gaiffe, of the merits of which M. Becquerel expresses himself in the highest terms:—"The simplicity of its construction, its cheapness, and the facility with which it works, determined me at once to experimentalize with it in my wards. . . . We have now used it for two months, and can only speak of it in terms of praise. It can be graduated with facility, and yields the weakest up to the strongest currents, intended to produce hyposthenization. It produces the two currents of which those physicians, who still believe in the difference of their action, can avail themselves; in one word, it is a good apparatus."

The second part is devoted to the consideration of the method of applying electricity to the organism, and of the nature of its action on the tissues; and it is in this portion of his work, in his physiological theories, that in our opinion M. Becquerel's work is weakest; whilst the third division is occupied with the more strictly therapeutical portion of his subject.

In critically examining M. Becquerel's Treatise, we shall first dispose of that which is always an ungrateful task to every proper-minded reviewer, when analyzing any able production; we mean, the taking of exceptions to the views entertained by the author. Now M. Becquerel has assumed, as a demonstrative fact, that the two currents respectively named by M. Duchenne and other authorities on these subjects, as currents of the first order and currents of the second order, are identical in their physiological action, although the very reverse of this is asserted by M. Duchenne and other equally eminent authorities. The experiments of one gentleman, M. van Holsb  ek, so far as they go, appear to be tolerably conclusive on this point. We quote from his work, "*Compendium d'Electricit   m  dicale*," where, in support of his view that they differ in their physical, chemical, and physiological actions, he states that "currents of the first order produce deflections of the needle of the galvanometer; that when two copper wires in connexion with the two parts of the apparatus are plunged into a metallic solution, the negative part is quickly coated with the metal, whilst the positive pole is deprived of it; in other words, the current of the first order has well-marked poles. The same phenomenon is witnessed in the decomposition of water: the oxygen is disengaged at the positive, the hydrogen at the negative pole; that *when a frog or a mouse is submitted to the action of a current of the*



*first order, it quickly falls down deprived of sensation and of motion, and if the application be continued, it finally sinks under it.* Whilst currents of the second order do not produce deflections of the needle of the galvanometer, the two copper wires plunged into the metallic solutions are both coated with the metal, but slowly, that is to say, this current has not distinct poles, *and a frog or a mouse reduced to the state of apparent death by the current of the first order, is rapidly revived under the influence of the current of the second order;* and, as the natural deduction from these experiments on animals, M. Van Holsb  ek concludes that “the current of the first order is an hyposthenic of nervous power, whilst that of the second order is an absolute stimulant.”

The difference in the physiological action of these two currents is very striking, and in our minds not to be explained by M. Becquerel’s theory, who attributes them to the different degrees of tension of the two currents. In a therapeutical point of view a correct determination is all important; and even those who support M. Becquerel’s views acknowledge the importance of the same apparatus being capable of furnishing us with *both* currents, as the case which is likely to be benefited by the current of low tension is unsuited for treatment by that of high tension, and *vice vers  *; an acknowledgment on their part approaching, as near as can be, a confession of the truth of the views entertained by Duchenne and Van Holsb  ek, and others who support their views of the physiological actions of the two currents.

One of the most interesting subjects connected with the therapeutical history of electricity, in all its forms, is the difference in the importance attached to its use on the Continent and in these countries. Abroad we find physicians of the greatest eminence making it one of their most frequently employed and most trusted means of treating disease; here, but little confidence is placed in it. Abroad, every hospital has its varied apparatus for administering it, apparatus every day put in use, and the value of which is tested in every form of disease; whilst a mass of experience and of facts are being accumulated, sufficient to put the members of our hospital staffs to the blush for their supineness; and yet this is not from any deficiency of information on the subject. So long ago as 1846, Dr. Neligan contributed a very interesting paper on this subject in the Edinburgh Monthly Journal of Medical Science for April. In this paper he very justly attributed the neglect into which this method of treating disease had fallen, to “the large size and difficulty of application of the various apparatus employed for their administration.” Since then this source of complaint has been fully

removed, and yet we find still existing the same apathy and neglect! In this paper Dr. Neligan brought forward some most encouraging cases of its successful employment, especially one of complete paralysis of the muscles of the forearm, following a fourth attack of painter's colic, in which case he was enabled to make a contrast between this plan of treatment, and the older routine one by splints, shampooing, blisters, strychnia, &c., highly in favour of the former. Since then we have had brochure after brochure appearing, principally, however, on the Continent, and yet does not this plan of treatment increase in favour, or indeed get the fair trial it merits amongst British physicians. Abroad, however, such is not the case: therapeutical electricity is pursued with energy, and has received so recognised a status that we actually find in the "*Journal Militaire*," bearing date September 13, 1858, "Instructions relative to the medical employment of electricity in the Military Hospitals in the interior of Algeria." These Instructions are prefaced by a "general order," establishing an electro-therapeutical plan of treatment in different military hospitals there pointed out, and the patients submitted to this plan of treatment are to form a distinct class, and to be under the control of a special physician. In these "Instructions," a minute description is given of the different electrical apparatus that may be employed, the method of manipulating and of preserving them is fully described, as also the rules to be followed in their employment, and then follows a list of those diseases in which, in the present state of the science, we may employ this plan of medication.

After making some very proper remarks on the responsibility that attaches to the employment of electricity, and cautioning those gentlemen from making biassed reports, in which "successful cases are exaggerated, negative facts are attenuated, and a profound silence observed with respect to accidents," the Report proceeds to give a list of the cases suited for its employment, which are thus classified:—

Lesions of mobility.

Lesions of sensation.

Alterations of nutrition.

In addition to these lesions, electricity has also been employed as a surgical appliance. Under each of these heads are arranged a series of instructions, giving a brief compendium of the present state of our knowledge on those subjects, principally based on the theoretical views of M. Duchenne. We shall pass over the three first of these divisions, and come at once to

the remarks made under the head of the "surgical uses of electricity."

"Aneurisms are the form of surgical disease in the treatment of which electricity has been most frequently applied, and with the greatest amount of success. The number of cases cured by these means was, in 1845, eleven out of eighteen cases; since then, in nine operations, we count eight successful, and one unsuccessful, but no fatal cases. Electricity has been pre-eminently successful in cases of aneurism consequent on unskilful venesection at the bend of the arm. There is no reason why we should not have recourse to it, not only in this case, but in every other when the tumour cannot be commanded by pressure or the ligature. The plan of proceeding which gives us the best chance of success is to introduce, as high as possible, a needle into the centre of the tumour, and to apply on the lower portion of the tumour a metallic plate placed on a piece of flannel of the same shape and size, moistened with a saline and slightly acidulated solution; the needle is to be in connexion with the positive, the metallic plate with the negative pole of the battery; this is essential. For a change of poles would result in accordance with observations that appear exact, in the prevention of the formation of the coagulum in the aneurismal sac."

Now, with all due respect for the authors of this document, we must state it as our opinion that traumatic aneurisms at the bend of the arm are not precisely those best suited for this plan of treatment; in no other situation do we find aneurisms more advantageously placed for a variety of treatment than here; it must not be for one moment imagined that the galvanic puncture is quite the harmless proceeding here represented; many, and some of them most serious, objections can be alleged against it. It is frequently most painful, occasionally gives rise to ulceration about the point of insertion of the needle, which may extend throughout its entire trajet; inflammation may follow its use, but, above all, the coagulum formed is not of a satisfactory character. Broca, in his admirable Treatise on Aneurism, has divided coagula into two classes—active and passive—the active are those composed of fibrine, hard, firm, and of rapid organization; the passive are of a softer consistency, break up with greater facility than the active; are composed, not only of fibrine, but also of blood globules, and are precisely those that are formed under the influence of the galvanic current.

Amongst the many interesting therapeutical uses of electricity enumerated by M. Becquerel, is its value in restoring the lacteal secretion in the female breast. The merit of this suggestion he attributes to M. Aubert, whose remarks on the

subject he extracts from the "Gazette des Hôpitaux" with the following comments: "After reading these observations, my first impression was altogether unfavourable to a similar application. I did not look upon it as of serious importance, and was inclined to consider the re-establishment in this case of the lacteal secretion as but a mere coincidence. Such were my impressions, when, in the month of October in this year, an opportunity presented itself of verifying the truth of this assertion, and of making a similar experiment."

He then records the case of a young lady suckling her infant, who lost her milk under the effect of mental impressions, and, as a consequence, the baby was near perishing from want of nutriment, which the mother resolutely refused to be supplied at the hands of a stranger. Under these circumstances M. Aubert's case flashed across his mind, and he determined to try electricity. On the evening of the first day on which it was applied, the milk reappeared, and after three applications an abundant secretion was re-established, and he concludes the case with this remark: "This result should induce practitioners to make a similar use of it;" a remark, as our readers will observe, in striking contrast with that with which he introduces the subject. Is M. Becquerel correct, however, in attributing the merit to M. Ludwig of first having demonstrated the power of electricity in increasing the amount of one liquid secretion, and of pointing out its sialogogue effects? M. Mauduyt, in his work on Electricity, published in 1778, drew especial attention to its diaphoretic and sialogogue powers, and since his time many authors have referred to its power over the secretions.

M. Becquerel's observations on the value of electrization in the treatment of saturnine poisoning has our fullest concurrence. In 1858, M. Briquet announced the application of electrization to the treatment of lead colic, and other forms of saturnine intoxication; he asserted that the pain disappeared under its influence, and that the lead was, by its agency, eliminated from the system. This application of electricity is not to be confounded with its employment as a stimulant to the muscular and nervous systems in local paralysis resulting from the ingestion of lead into the system, when electrization is employed as an adjuvant after the lead has been removed by other means, or concomitant with such treatment. M. Briquet proposes it as the sole *remedium*, and records many cases in support of his views. The self-complacency with which M. Briquet makes the following remark is worthy of the plan of treatment which he advocates: "The *only* means additional to faradisation em-



ployed were the sulphuric acid lemonade, a draught containing from 2 to 3 grammes (from about 30 to 45 grains) of sulphate of alum, a pill containing 5 centigrammes (about  $\frac{3}{4}$  of a grain) of watery extract of opium, and a sulphur bath every second day." We can well afford to doubt the efficacy of faradisation here: surely this is our most approved plan of treating the disease in question, and it is rather putting our credulity too severely to task to ask of us to attribute the symptoms of amelioration in these cases principally to the faradisation, when the experience of thousands of similar cases treated alone by what M. Briquet is pleased to term his "adjuvants to faradisation" convinces us that they alone are competent to cure, without any assistance whatsoever from the electricity. That the pain of lead colic may be abated, nay, even absolutely removed in some cases, we are free to admit; but even to this statement we can find numerous exceptions; but that molecules of lead deposited in the several tissues of the body can be thence eliminated, is more than we can acknowledge, and until electrization is capable of effecting this, or is proved to have this power, we can only look on it as of very minor importance, indeed, in the treatment of saturnine intoxication. It may temporarily relieve the pain, but the *fons et origo mali*, the lead, still exists in the system, prepared to reproduce the former symptoms, and, until it be eliminated, the treatment at best can be considered as but palliative, by no means as a true remedy or cure. M. Becquerel gives us a striking illustration of the truth of these views in the following case, condensed here from his present treatise: "A house-painter, aged 28 years, came into l'Hôpital de la Pitié on the 6th January, 1860, suffering from well-marked symptoms of lead colic; two drops of croton oil were administered to him, which produced three stools, and had the effect of diminishing the pain, which was still, however, well marked, and sufficient to cause him occasionally to cry out; under these circumstances the idea entered my head of once more trying whether electricity could give relief to his sufferings; with this view we made use of a Ruhmkorff's machine, and for five minutes subjected him to the influence of a current sufficiently strong to make him grasp and twist the sheets; on being asked now as to the pain, he replied that there was none,—that it had entirely disappeared. I was pleased at the result, but at the same time warned the pupils who surrounded me, that, though it was true that in this particular case the electric current had the power of relieving the pain, still, that it had not the power of curing the disease of saturnine intoxication, because the cause,

that is the molecules of lead, still remaining, the effects would also remain.

"Time was not slow in verifying my predictions, for, not having been subjected to any treatment on the following day, on the next day but one he presented all the symptoms of intense fever, and on the day following that, he was in a most pitiable condition: violent headach, numbness of the upper and lower extremities, clenched jaws, fingers firmly extended, thumbs flexed on the palms of the hand; high fever, and a sensation of constriction both of the abdomen and of the chest; praying for the speediest relief—such was the picture presented to us by our patient." M. Becquerel then describes the treatment of the case, which, however, has for us no further interest. We have quoted it here to support the views that we entertain on the subject, and in our minds it is conclusive.

We must here bid adieu to M. Becquerel's most instructive treatise: written by one of the first physicians in France, it bears on every page the impress of the thoughtful, accomplished medical man, and of the sound natural philosopher. If our present comments but induce our brethren in this country to take up this most important department of therapeutics, they will not have been written in vain, and any one who does so cannot adopt a better guide than M. Becquerel. We are firmly of opinion that in these countries this plan of treatment is as much under-valued, as on the Continent it is, perhaps, over-estimated; to arrive at its true value will require careful experiments, conducted by parties who are not sceptics on the one hand, or enthusiasts on the other; by practitioners impressed with the value of medicines, but prepared to admit the claims of electrization, if sufficiently demonstrated; in a word, in this, as in every other department of science, truth will attend the investigations of the patient, accurate, and unbiassed observer.

The second work on our list is, if all stated in it be correct, a most remarkable one, and will mark the commencement of a new era in our profession. But we fear much that, as the salutary and much demanded reduction in the doses of medicines formerly administered—the loudly-called for reformation of the drugging and drenching system—gave birth to homœopathy, as the well-directed use of the bath gave rise to hydro-pathy, as the Edinburgh theory of a deficiency in the saline constituents of the blood in cholera resulted in the brandy-and-salt charlatanry—so may the undoubted remedial effects of electrization have given origin to the system here announced by M. Seiler. That French physicians have but little faith in

the more potent of the remedies furnished us by the *Materia Medica*, is a fact but too patent to those who are familiar with their cliniques, or who are in the habit of perusing their periodical literature; of *tisanes*, of *siropes*, *et hoc genus omne*, we read abundantly, in cases where the more sturdy British practitioner would have recourse to far more energetic measures; and in this manner may we account for the tenacity with which they cling to any plan of treatment that promises to fill up the void left by such a line of practice. Whilst entertaining such opinions, however, we should be sorry to undervalue, through mere ignorance, a plan of treatment that may have some facts to support it; and we therefore consider it the more just course for us to adopt, to briefly sketch out the principle advocated by M. Seiler, to indicate the cases in which, as he states, he has employed it with advantage, and to leave the matter then for the mature consideration of our readers.

During the latter months of the year 1853, M. Seiler engaged himself in making a series of experiments, with the object of producing local anæsthesia; and, amongst other means, tried that of the electro-galvanic induction current; making passes, in imitation of the animal magnetizers or mesmerists, with the instrument over the patient's person, but without touching it or producing any discharge of the electric spark. For some time these experiments were unattended with any result; but at last one individual (*a female*) declared, after a long sitting, during which a great number of passes were made over her arm, that she felt it numb; that her muscles were contracted, and that she felt some difficulty in stirring her fingers; but that she experienced no anæsthetic effect whatsoever; and next day reported that the contraction of the muscles of the arm, which she had experienced the previous evening, had persisted during several hours. The experiment was repeated, and always with the same result; but he experienced considerable difficulty in meeting with other patients of a similarly sensitive organization. By degrees, however, he was more successful, meeting with a sufficient number to confirm the reality of his discovery, to realize the full effects of which, however, he was constrained to have constructed for his own use an induction machine, in which he introduced some modifications, the result of which is, that he is enabled to produce these effects on every person, *with but few exceptions* ("*Sur tout le monde, ou à peu près*").

These last words, which we have put in italics, are what fill our minds with misgivings on the subject. Well aware are we of the result attending the manipulations of mesmerists

in persons of highly sensitive organization, how impressionable they are, and how extremely likely we are, in their case, to confound cause with effect. This subject, however, is too extensive for us to enter on here; we must pass on to the class of cases which have received benefit from the plan of treatment here recommended by M. Seiler, and for a description of whose apparatus we must refer the reader to the work in question.

The class of cases in which the author has, as yet, employed it, are pretty nearly those indicated on his title-page. In curvatures of the spine his object is to produce the numbness and stiffness of the muscles of the affected side, described in the case which first attracted his attention; in this manner he has produced, so far as the cases recorded can evidence, most admirable results. In these class of cases we can catch a glimpse of the *methodus medendi*; not so, however, in its application to diseases of the lungs; here, as in phthisis, its employment is suggested with the view of enlarging the capacity of the thorax, and its efficacy is attempted to be supported in such cases by measurements; how fallacious these but too often are, is well known to every practising physician; but admitting, for argument sake, the fact, how are the rigidity and numbness of the lumbar muscles, so essential to the cure of curvature of the spine, according to our author's views, to be rendered compatible with the existence of a similar condition in the muscles of the thorax, inducing an increased capacity of the latter cavity? Marvellous as are the cases detailed in this portion of M. Seiler's treatise, they pale and sink into comparative insignificance, when contrasted with the case of prolapsus uteri of Madame F., of which we shall submit a condensed description for our readers' benefit and instruction.

"On the 17th of July, 1855, M. Seiler was called on to visit Madame F., thirty-six years of age, of small size, thin and spare in habit—a charwoman. She had fallen backwards a few days before, and was now suffering from complete prolapsus uteri. She was in bed, suffering cruelly from pain in the belly, and from inflammation of the mucous coat of the uterus, which she was unable to replace. M. Seiler exerted himself to replace it, but ineffectually; violent colicky pains, and the straining attendant thereon, invariably reproduced the displacement, and he had to content himself with one opiate cataplasm, and a twelfth of a grain of acetate of morphia, to be taken each hour. Next day, the colicky pains having much diminished, he was able to return the uterus partially, but it remained at the entrance of the vagina, ready to descend again on the least exertion; the treatment was continued, and at the end of three



days Madame F. was able to get up, but was no sooner erect than the uterus descended again; he now made use of a bandage, and the patient came to his house to try the effect of his form of galvanization, on the very first application of which the patient expressed herself as feeling a constriction of the walls of the vagina, at the same time a sensation as if the womb were slightly ascending. After a ten minutes' sitting she was made to walk about the room, and on examination it was ascertained that the uterus had not redescended; but, on the contrary, was situated higher up than before the commencement of the operation. On the day following the second operation, Madame F. came with joy to inform him that the womb had never since prolapsed; that she was well able to walk, and, in a word, believed herself to be on the high road to a perfect cure—anticipations fully realized, after a continuance of the treatment for three weeks, when she was able to resume her usual avocations—the uterus was in its proper site; and from that time forth this poor woman has not ceased toiling from morning till night, frequently carrying on her head loads far beyond her strength; and, nevertheless, the womb has never since been displaced!"

Many such cases are here recorded; however, we must leave the further decision in the hands of our obstetrical brethren. The monograph is worthy of careful perusal, of serious consideration, of further observation, before any one should feel himself competent to express decided approbation or disapprobation.

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*Chapters on Diseases of the Ovaries, translated, by permission, from Kiwisch's Clinical Lectures on the special Pathology and Treatment of the Diseases of Women: with Notes and an Appendix on the Operation of Ovariectomy.* By JOHN CLAY, M. R. C. S. Eng., &c. &c. London: Churchill. 1860. 8vo, pp. 430.

If names can give any assurance for the character and merits of a book, the one now before us on Ovarian Diseases should be of a high class. The writings of the late Professor Kiwisch von Rotterau have justly obtained for him an exalted place among obstetric authorities. Professor Scanzoni, of Wurtzburg (of whose edition of Kiwisch's work on the Diseases of Women the present is a translation), enjoys at the present time the greatest reputation as an accoucheur in Germany; and the name of Clay is likely to be long associated with the subject of

ovarian tumours and ovariectomy—although the translator of this treatise is not, we believe, the gentleman whose heroic operations have gained this association for the name.

Our knowledge of the pathology of ovarian diseases is of very modern date. In fact, the particular function discharged by these organs in the female economy, and their exact relation to menstruation, are matters of comparatively recent discovery. But, till these were established and clearly understood, it was not to be expected that we could have any acquaintance with the semeiology or pathology of the diseases to which these organs are subject. The first few pages of the work now before us form a sort of introductory chapter, being taken up with the consideration of the anatomy and physiology of the ovaries. Without being minute, it is concise and good. The relations of the ovaries to the adjacent viscera, especially to the intestines, is well described, and as this is a point of no small importance in the diagnosis of abdominal tumours, we shall quote the author's observations:

“When we take into consideration the anatomical relations of the ovaries to the other adjacent structures, it is evident that the small intestine lies directly upon them. The movability enjoyed by this portion of the bowel may readily cause displacement of the ovaries; while, on the other hand, the small intestine may be pushed upwards by ovarian enlargements; but, as the size of the tumour increases, it will be pressed backwards in consequence of being tied down by the mesentery; under such circumstances, large ovarian tumours always come into direct contact with the anterior abdominal wall, and give rise to the percussion sounds, which will be afterwards described. We have also to observe, that in consequence of the peristaltic contractions of the bowel, pathological adhesions of the ovaries to it are not easily produced, and are very rare compared with the frequent adhesions of the ovarian organs to the other adjacent structures. We must not overlook the fact that the small intestine never lies below an ovarian tumour, so that the ovary always occupies the lowermost place in the pelvis—a circumstance not without importance in operations from the floor of the vagina. The rectum, which, even in the normal position, is situated very near the ovaries, especially on the left side, comes in all cases of considerable ovarian enlargement, into still closer contact with them, and the freer the tumour is, the more posteriorly it is situated—as we have already remarked.”

The modern “ovular theory” of menstruation, first projected by Dr. Power, but conclusively established by the discoveries of Negrier, Robert Lee, Gendrin, Bischoff, and others, is fully accepted by our author. With regard to the interest-

ing question of whether menstruation is the only mode by which the Graafian follicles can be evacuated, or whether this may be accomplished in any other way, his statements seem rather at variance. For, first, he admits that a pathological hyperæmic condition of the ovaries, if it reaches the necessary extent, may result in the dehiscence of Graafian follicles; but, he adds that, under all circumstances, a persistent accumulation of blood in the ovaries is the only means by which such results can be produced; and he further adds this remark: "In general this must occur very seldom, and we would particularly mention in this place that they can least of all be occasioned by the transient sexual excitement caused during coition." Few physiologists, we imagine, will concur in this opinion. That a vesicle is not ruptured at each and every act of sexual congress, cannot be denied; but, when fruitful intercourse takes place, the case is widely different, and we must then suppose that an ovule is immediately or very soon afterwards discharged from the ovary. On a point of such obscurity, however, it is the wisest course abstaining from any dogmatic assertion, and though we differ from the author on this matter of opinion, still we would not wish to put forward our views with the same confidence he does his.

The sections upon the Pathology and Diagnosis of Ovarian Diseases in general are about the best in the book, though not, perhaps, as abundant in practical instruction as one might have expected from authors of such extensive experience in the diseases of these organs. The opinion that one or other ovary is principally disposed to disease is wholly rejected. Respecting the occurrence of tuberculosis in the ovary, he states that it does not appear to him to have been demonstrated, with certainty. The only approach to it he has met with was the appearance of some granules of a rather questionable tubercular character in the ovary of a patient who had intense peritoneal tuberculosis in the pelvic cavity. That the ovaries should be exempt from tubercular deposition, is certainly a very remarkable fact—if fact it be—and well deserving the attention of observers. Kiwisch is here at issue with other authorities, and the point must, therefore, be still looked upon as unsettled. As regards the concurrence or combination of ovarian diseases, in the same ovary, experience shows that different diseases may occur simultaneously in the ovary; and that it is often possible to study, in a single diseased ovary, the greater part of the forms of disease which take place in this organ—such at least is the opinion of our author.

In classifying the diseases to which the ovaries are obnox-

ious, Kiwisch takes for his foundation their anatomical structure; as, by proceeding in this way, he thinks the principal organic changes met with in them can be most successfully investigated. He does not rigidly adhere to this system of classification, however; for, if so, there would have been no place for his second class of diseases, namely, dislocation of the ovaries. He admits that it does not include affections consisting merely in abnormal sensibility (neuralgia), or functional disturbance; for, though such certainly do occur, and he believes he has observed something answering to the oophoralgia of some authors, yet, from the deep situation of the organs, these affections, he says, are almost unknown to us. We confess to being very dissatisfied with this reasoning; nor do we think that the inaccessible position of an organ, of necessity renders the diagnosis of its diseases impossible or difficult. The brain, the spinal marrow, the kidneys, are all beyond the reach of manual examination, and, therefore, in its important sense, "deeply situated;" and yet their functional diseases are by no means unknown to us. That there is such a complaint as ovarian neuralgia, or ovarian irritation, cannot be doubted; Dr. Churchill has given a full description of it in a former Number of this Journal<sup>a</sup>.

In the carrying out of his classification Kiwisch endeavours, and very properly, to satisfy practical requirements as far as possible; hence the more prominent external signs are made available to their full extent. These considerations induce him to separate chronic enlargements of the ovaries into two great groups, viz., fluctuating and solid tumours. The following is his arrangement of ovarian diseases:—1. Imperfect development; 2. Dislocations; 3. Inflammations; 4. Simple, and, 5. Compound follicular degenerations and formation of secondary cysts; 6. Solid tumours of the ovaries.

The section on "Dislocations of the Ovaries" contains little more than a description of the different herniary protrusions, which experience has shown may have one or both ovaries identified with them. To illustrate the subject, many of the recorded examples of this anomaly are quoted. Dr. Rigby, in his work on Female Diseases<sup>b</sup>, has very clearly pointed out a train of symptoms, attended with great suffering, arising from displacement and consequent compression of the ovary. Kiwisch gives us no information upon this point. He died, however, before the publication of Dr. Rigby's work. But assuredly

<sup>a</sup> August, 1851, No. XXIII.

<sup>b</sup> Reviewed in No. XLV. of this Journal.



his Wurtzburg editor, or English translator, might have given us the benefit of a "note" on the subject.

Acute inflammation of the ovary is treated of under two heads, according as it occurs in the puerperal and non-puerperal states. Under each of these heads we have a formal consideration of the subject in regard to its "pathological anatomy," "etiology," "symptoms and course," "diagnosis," "prognosis," and "treatment." Abscesses of the ovaries are, without any sufficient reason, we think, treated of separately and distinctly, and with the same tedious formality, and the unavoidable repetitions which this dry and perfunctory mode of handling a practical subject requires. We cannot say that the text throws much light on the diagnosis or treatment of these obscure affections, and we entirely concur in the remark of the translator, "that the pathology and symptomatology of the neuralgic, congestive, and primary inflammatory diseases of the ovary are yet imperfectly understood." With reference to the therapeutics of simple ovarian dropsy, or "simple follicular degeneration," as the author designates it, his remarks are far from encouraging:—

"We must, unfortunately, confess," he writes, "that hitherto not much progress has been made as to the radical internal treatment, or even in the essential amelioration of the more developed forms of the disease. Notwithstanding this great uncertainty of our therapeutics, we must still, out of humanity, make frequent careful attempts at cure in our patients, and repeat them so long as it is not permitted us to adopt another, namely, an operative treatment; because, on the one hand, it appears that in some cases essential results have been obtained, and the progress of the disease checked, by the internal treatment, while the moral power of the patient is often degraded in a very sad manner by the loss of hope on the part of the physician."

The different modes of surgical treatment, palliative or curative, that have been recommended for the cure of simple ovarian cysts, are well described. The author's *method of radical treatment* would seem to be about the most successful, not only in his own practice, but in that of others, especially of Scanzoni. Of it the translator remarks—"Notwithstanding the fears of Dr. West, the success of this method of operating, according to his results and those of Kiwisch and Scanzoni, is very great; and, as will be found hereafter, by no other treatment has (*sic*) similar results been obtained." We shall transcribe the author's own description of his method of procedure:—

"Our method is generally applicable to moderately large, simple cysts, which do not exceed the size of a large pregnant uterus, and

can be reached from the vagina. Smaller cysts are obviously still more suitable to it as soon as they can be recognised. In order to answer the purpose intended by us, the cyst is opened through the wall of the vagina to such an extent that a finger can be easily introduced through the wound. After evacuation has been effected, a strong, long uterine tube, with a bulbous extremity, is introduced into the cyst and fastened in front of the genital organs, and left for several weeks, until diminution of the cavity of the cyst takes place, which process is accelerated by the daily injection of warm water."

In addition to the above, he gives minute details of each step of the operation; but such of our readers as may desire to be made acquainted with them, we must refer to the work itself. Although much pressed for space, we cannot conclude this notice without some allusion to the observations on extirpation of ovarian tumours, as the opinion of so high an authority as Kiwisch—who himself performed ovariectomy five times—is entitled to much respect. He tells us that in the first edition of his Lectures he gave a review of 122 cases, "which, in consequence of their great interest, are increased by a few, and inserted here, statistically arranged." No such statistical table is to be found, and the omission is explained by a note of the translator's, to this effect—"The tables referred to in the text were found incorrect, scanty in detail, and incomplete; they have been therefore omitted, and new ones prepared, which are placed in the appendix.—J. C." We confess that this seems to us taking rather a liberty with an author. We should have much preferred Kiwisch's own table being inserted, and for the translator to have indicated, in any way he thought best, where it was erroneous. To leave out, and summarily condemn, the collection of data upon which, in all probability, his opinion respecting this much debated question of ovariectomy was based, is scarcely doing justice to a deceased author. The remarks upon the value of the operation are given with much caution and reserve. Kiwisch performed it himself five times, but without success. This, one would think, might have prejudiced him against it, yet he very fairly states the advantages and the disadvantages of extirpation, and believes "that it is to be so much the less wholly repudiated, because it is expected that with the progress of diagnosis the results of this operation will be still more favourable." In his enumeration of the difficulties connected with the operation, he mentions ambiguity of the diagnosis as one of them, adding that this difficulty is combated by the fact that in cases where there is a doubt of the diagnosis one does

not operate: "but this prudence," he continues, "is not peculiar to every lover of operations, as recent English literature shows (*cases*) in which, uterine fibroids sometimes being found, instead of ovarian tumours, the former were extirpated, and brought the patient to a speedy death." This caustic allusion to the heroic operations of some modern English surgeons contains a well-merited rebuke.

Mr. Clay's tables of cases of ovariectomy occupy nearly half the volume. We cannot enter into anything like a minute analysis of them, but the gross results, obtained by careful computation, will be interesting. The total number of cases given, in which an operation was undertaken for the removal of a real or supposed ovarian tumour, is 533; of this number, 234 appear to have died from the effects of the operation; and 299 to have recovered; but of these 299, only 212 were really fit subjects for the operation, and derived from it a *bonâ fide* cure of their complaint. After the operation of complete extirpation of the ovarian tumour, 183 patients, or very nearly half the entire number, died; and 212, as we have just remarked, recovered. So that it just comes to this: that, of 533 patients operated on for the extirpation of real or supposed ovarian tumours, only 212 were cured of this complaint, 234 perished through the attempt, and 87 escaped with their lives, and no more. These results forcibly point out the importance of directing attention to the improvement and perfecting of our means of diagnosing the *really suitable* cases for operation.

These tables are arranged under different heads, and all give the "source of information." The translator in the preface tells us he applied to many members of the profession for the results of their experience, &c., in reference to ovariectomy, and that in nearly every instance his "communications were responded to with the greatest courtesy."

"To particularize," he says, "would be an invidious distinction," but, "in justice to those who so kindly aided him," he deems it "a less pleasing duty to perform," to mention the individuals who were "not courteous enough to reply to his communications for particulars." This *black list* contains three names. Now, had the translator published the names of those gentlemen only who were so kind as to answer his inquiries, and had suppressed the others, he would, according to our notions, have done the right thing. We do not at all see that a medical man is called on to supply information to all who may choose to send him queries. It has of late years become a common practice for embryo authors to send round printed lists of queries to medical men, for the purpose of eliciting

facts or information from them, and so to obtain materials for a book. Where the parties are strangers to each other, this is an unwarrantable proceeding, and we do not see that any medical man is bound to take notice of such applications. Most strongly, therefore, do we protest against holding up to public censure (as the translator does) the names of those who do not feel themselves called upon to answer all such inquiries. Indeed, we cannot see how any censure can attach to them for so doing.

As ovarian diseases engross so much attention at the present day, we doubt not the work before us will prove a most acceptable and valuable addition to our literature upon this subject. By ovariologists and others, Mr. Clay's tables will, no doubt, be highly appreciated.

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*The Medical Knowledge of Shakespeare.* By JOHN CHARLES BUCKNILL, M. D. Lond., &c. &c. London: Longman & Co. 1860. 8vo, pp. 292.

SINCE the earliest period after the death of our greatest English dramatist that attention was attracted to the study of his plays, the wonder of all has been at the universality of knowledge he possessed. The more the works of Shakespeare are studied, the more astonishing becomes, not alone the universality, but the accuracy of his knowledge. This has induced many to believe that he must have been indoctrinated in his youth in not only one, but in all of the learned professions. To carry out this view, the present Lord Chancellor of England recently published an essay to prove that, from the legal knowledge exhibited by Shakespeare in his dramatic works, he must have been a lawyer. And now Dr. Bucknill, in the learned volume before us, endeavours to prove he must have been a member of our profession. The book scarcely falls, legitimately, within the scope of our literary criticism, but we think it right that the able author should have the benefit of our medical opinion as to how well he has executed his task. Already well and favourably known as an author in the special department of medical science to which he has devoted himself, Dr. Bucknill has nevertheless surprised us by the close and logical reasoning he has brought to bear on his present subject, and the general acquaintance with its literature which he exhibits.

The best evidence of this we can lay before our readers is to extract some of the illustrations from Shakespeare's plays which Dr. Bucknill gives, and his commentaries thereon. And



first we shall select his running commentary on "The Merchant of Venice."

"In the following passage the intimate connexion between mind and body is sketched with exact physiological truth. Perhaps the most curious and undoubted instance of the mind's influence in the production of bodily disease, is jaundice caused by depressing emotion. It is not always 'crept' into, since bad news has frequently been known to cause jaundice in a few hours. In Dr. Copland's great and learned Dictionary of Medicine, it is stated, that, 'The most common exciting causes of jaundice are the violent mental emotions,' and in the list of these emotions, which he adds, he specially includes 'peevishness.' In Dr. Watson's 'Lectures on Physic,' that able physician states, that among the causes of jaundice 'the *pathemata mentis* play their assigned part; fits of anger and fear and alarm have been presently followed by jaundice.' He mentions an instance of a friend of his who became jaundiced from needless anxiety about an approaching examination, and adds, 'there are scores of instances on record to the same effect.' This curious medical fact is sketched with exact fidelity in the following passage. The effect of wine on the temperature of the liver, and despondency on that of the heart, are also unquestionably medical thoughts.

" 'With mirth and laughter let old wrinkles come;  
And let my liver rather heat with wine,  
Than my heart cool with mortifying groans.  
Why should a man whose blood is warm within  
Sit like his grandsire cut in alabaster?  
Sleep when he wakes? and creep into the jaundice  
By being peevish?' Act i., Scene 1.

"The very same medical idea is more tersely expressed in 'Troilus and Cressida.'

" 'What grief hath set the jaundice on your cheeks?'  
Act i., Scene 3.

"The bad effect on the health of the two extremes of diet, abstinence and excess, are here marked.

" '*Nerissa*. For aught I see, they are as sick that surfeit with too much, as they that starve with nothing. It is no small happiness, therefore, to be seated in the mean; superfluity comes sooner by white hairs, but competency lives longer.'—Act i., Scene 2.

"The tyranny of desire over reason is here stated physiologically; the blood in this sense being always used poetically for the promptings of animal passion. A better knowledge has indeed exploded the theory, and attributed both reason and passion to the brain, though to different parts of it.

“ ‘ *Portia*. The brain may devise laws for the blood; but a hot temper leaps o’er a cold decree: such a hare is madness the youth, to skip o’er the meshes of good counsel the cripple.’—*Act i., Sc. 2.*

“ I have not met with an explanation of the term sand-blind. Sand may be a cause of blindness, as in Egypt, but this guess will scarcely help. The term was, probably, one in vulgar use.

“ ‘ *Launcelot*. O heavens, this is my true-begotten father! who, being more than sand-blind, high-gravel blind, knows me not.

“ ‘ *Gobbo*. Alack, sir, I am sand-blind, I know you not.’

*Act ii., Scene 2.*

“ The common nature of man is argued medically and physiologically in Shylock’s speech; the use of the word ‘organs’ being almost technical.

“ ‘ Hath not a Jew eyes? hath not a Jew hands, organs, dimensions, senses, affections, passions? fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same winter and summer, as a Christian is? If you prick us, do we not bleed? if you tickle us, do we not laugh? if you poison us, do we not die? and if you wrong us, shall we not revenge?’—*Act iii., Scene 1.*

“ A flesh wound across the muscle fibre bleeding a man to death is here the thought:

“ ‘ *Bassanio*. Here is a letter, lady;

The paper as the body of my friend,

And every word in it a gaping wound,

Issuing life-blood.’

*Act iii., Scene 2.*

“ Shylock’s exposition of antipathies might possibly have found its example from Shakespeare’s own observation of these curious phenomena. The only one of the three which is common is that to a cat.

“ ‘ Some men there are love not a gaping pig;

Some, that are mad if they behold a cat;

And others, when the bagpipe sings i’ the nose,

Cannot contain their urine; for affection,

Master of passion, sways it to the mood

Of what it likes, or loaths.’

*Act iv., Scene 1.*

“ The following has reference to the practice of the old herbalists, who attributed peculiar virtues to plants gathered during particular phases of the moon and hours of the night.

“ ‘ *Jessica*.

In such a night,

Medea gathered the enchanted herbs

That did renew old Æson.’

*Act v., Scene 1.”*

Our next extract will be much longer, but is so illustrative of Shakespeare's knowledge of medicine, and of Dr. Bucknill's able reasoning in proof of the task he has undertaken, that we feel we would do him injustice were we to contract it. The commentary is on the play of "King Henry the Fourth.—Second Part."

"Northumberland, whom illness has prevented from taking part in Shrewsbury fight, when he hears from Mortimer the news of his son's death and the defeat of his army, commences his reply with the medical axiom, *ubi virus ibi virtus*, and describes the effect of delirium in restoring temporary strength to a fever-weakened patient.

" ' In poison there is physic; and these news,  
Having been well that would have made me sick,  
Being sick, have in some measure made me well:  
And as the wretch, whose fever-weakened joints,  
Like strengthless hinges, buckle under life,  
Impatient of his fit, breaks like a fire  
Out of his keeper's arms; even so my limbs,  
Weakened with grief, being now enrag'd with grief,  
Are thrice themselves.' *Act i., Scene 1.*

"His friends exhort him to check this 'stormy passion,' which, if indulged, must destroy his health.

" ' Morton. The lives of all your loving 'complices  
Lean on your health; the which, if you give o'er  
To stormy passion, must perforce decay.' *Act i., Scene 1.*

"Mortimer accounts for the defeat of the rebel army, by the want of good will to their cause among the soldiers. Queasiness, 'a tendency to nausea,' constrained by the will, is the most fitting expression which could be found, for the sense of disgusted taste caused by medicine.

" ' And they did fight with queasiness, constrained,  
As men drink potions.' *Act i., Scene 1.*

"Laughter-loving and laughter-moving Sir John appears to have suffered a little in health by the Shrewsbury campaign. He inquires of that 'whoreson mandrake' of a page, whom the Prince hath given him as a foil.

" ' Falstaff. Sirrah, you giant, what says the doctor to my water?

" ' Page. He said, sir, the water itself was a good healthy water: but, for the party that owned it, he might have more diseases than he knew for.' *Act i., Scene 2.*

"A good honest opinion this, though quite at variance with the doctrines of the old water-doctors, who pretended to recognise all

diseases from the aspects of this excrement. Sir John has fallen upon evil times, his tailor will not trust him and demands security, 'I had as lief they put a rat's bane in my mouth, as offer to stop it with security.' He is in ill health, and in ill credit, 'can get no remedy against this consumption of the purse, borrowing only lingers and lingers it out, but the disease is incurable.' In this frame of mind he encounters the chief justice, who has good cause and ample power to crush him, but Gascoyne, who had the courage to imprison the Prince of Wales, was magnanimously slow to take offence. Falstaff evidently knows this well, and has taken accurate gauge of his man; he pretends to sympathise with his lordship on his supposed illness: 'I am glad to see your lordship abroad; I heard say your lordship was sick; I hope your lordship goes abroad by advice; I most humbly beseech your lordship to have a reverend care of your health.' This put-off to the subject of the chief justice's inquiry, the night's exploit on Gadshill, not answering its purpose, Falstaff struggles hard to divert attention to the king's illness, which he describes as an apoplexy, and correctly refers to some of its causes and earlier symptoms, lethargic feelings, tingling sensations, deafness.

" ' *Fal.* And I hear, moreover, his highness is fallen into this whoreson apoplexy.'

" ' This apoplexy is, as I take it, a kind of lethargy; a kind of sleeping in the blood, a whoreson tingling.'

" ' It hath its original from much grief; from study, and perturbation of the brain: I have read the cause of his effects in Galen; it is a kind of deafness.'

*Act i., Scene 2.*

" A wilful deafness on Sir John's part, for which the chief justice proposes to be his physician. The patient, however, objects:

" ' Your lordship may minister the portion of imprisonment to me, in respect to poverty; but how I should be your patient to follow your prescriptions, the wise may make some dram of a scruple, or indeed a scruple itself.'

*Act i., Scene 2.*

" The chief justice, 'loath to gall a new healed wound,' lets the fat reprobate off very easily. But when he assumes the privileges of youth, and attributes to his opponent the harshness of age, 'you measure the heat of our livers with the bitterness of your galls,' the reverend man of law shows that he can play a good stick in the duello of controversy; and thus holds a glass up to the hoary debauchee, in which he may contemplate the physical defects of age.

" ' *Chief Justice.* Do you set down your name in the scroll of youth, that are written down old with all the characters of age? Have you not a moist eye, a dry hand, a yellow cheek, a white beard, a decreasing leg, an increasing belly? Is not your voice broken? your wind short? your chin double? your wit single?



and every part about you blasted with antiquity? and will you yet call yourself young? Fie, fie, fie, Sir John.' *Act i., Scene 2.*

"Falstaff exclaims against fighting on a hot day, and wishes he may 'never spit white again,' should it so happen. The colour of the spittle was, with the medical men of olden times, an important point of diagnosis, especially of temperaments. With admirable effrontery, Falstaff concludes the war of words by asking the great law lord to lend him a thousand pounds, and he comments on the refusal as an old physician might do.

" 'A man can no more separate age and covetousness, than he can part young limbs and lechery; but the gout galls the one, and the pox pinches the other; and so both the degrees prevent my curses.' *Act i., Scene 2.*

"Sir John, indeed, speaks feelingly on this point.

" 'A pox of this gout! or, a gout of this pox!—for the one or the other plays the rogue with my great toe. It is no matter if I do halt; I have the wars for my colour, and my pension shall seem the more reasonable. A good wit will make use of anything; I will turn diseases to commodity.' *Act i., Scene 2.*

"The force of imagination in madness is referred to by Lord Bardolph, in his account of Hotspur's defeat, who

" 'With great imagination,  
Proper to madmen, led his powers to death,  
And, winking, leap'd into destruction.' *Act i., Scene 3.*

"The archbishop's bitter reproach on the fickleness of popular favour alludes to surfeit from greedy feeding, and to vomiting willfully provoked, as by tickling the fauces, to relieve the overloaded stomach.

" 'The commonwealth is sick of their own choice;  
Their over-greedy love have surfeited:—  
An habitation giddy and unsure  
Hath he that buildeth on the vulgar heart.  
O, thou fond many; with what loud applause  
Didst thou beat heaven with blessing Bolingbroke,  
Before he was what thou wouldst have him be!  
And being now trimmed in thine own desires,  
Thou, beastly feeder, art so full of him,  
That thou provok'st thyself to cast him up.  
So, so, thou common dog, didst thou disgorge  
Thy glutton bosom of the royal Richard;  
And now thou wouldst eat thy dead vomit up.'

*Act i., Scene 3.*

"The fat hostess of the immortal Boar's Head has sundry medical opinions. When she reminds Sir John of his oath, sworn

‘upon a parcel gilt goblet,’ she endeavours to help his recollection by the association of the idea with his head at that time broken, and with gossip Quickly’s dish of prawns, which ‘were ill for a green wound.’

“Further on, she ‘affects to nod’ even in the technical language of the profession, though she uses the terms most malappropriately. Doll Tear-sheet is suffering, probably from the effects of a debauch, when the sympathizing hostess attempts to console and cheer her, feeling her pulse, and pronouncing on the symptoms.

“‘*Hostess*. I’faith, sweetheart, methinks now you are in an excellent good temperality: your pulsidge beats as extraordinarily as heart would desire; and your colour, I warrant you, is as red as any rose. But, you have drunk too much canaries; and that’s a marvellous searching wine, and it perfumes the blood ere one can say, What’s this? How do you now?

“‘*Doll Tearsheet*. Better than I was. Hem!

“‘*Host*. Why, that’s well said; a good heart’s worth gold. Look, here comes Sir John.

“‘*Fal*. When Arthur first in court—Empty the jordan—And was a worthy king. How now, Mistress Doll?

“‘*Host*. Sick of a calm; yea, good sooth.’ *Act ii., Scene 4*.

“‘Temperality,’ no doubt, means ‘temperature,’ and pulsidge, of course, means pulse, but how canaries ‘perfumes’ the blood is not quite so evident. The probable meaning is that it ‘inflames’ the blood. The ‘calm’ of which Doll was sick was, evidently, a qualm, though Falstaff wilfully misunderstands it in the quieter sense. The word ‘jordan,’ which occurs twice in this play, reminds one that Chaucer distinguishes it from the urinal.

“Prince Henry gives the best simile of Falstaff of which medicine is capable; namely, a wen, a monstrous fatty tumour.

“‘I do allow this wen to be as familiar with me as my dog.’

*Act ii., Scene 2*.

“This is far better than the one he applies to the same person in the *First Part of Henry IV.*, ‘Thou swollen parcel of dropsies,’ which evidently cannot hold water as a simile, and is a mere vituperative untruth.

“The distinction between rank and dangerous diseases, and slighter indispositions, is freely drawn in the dialogue between the king and Warwick. The ‘good advice,’ which in the mere distemperature of the body may render much medicine needless, would appear to mean what modern physicians call ‘regimen.’

“‘*K. Henry*. Have you read o’er the letters that I sent you?  
*Warwick*. We have, my liege.

*K. Hen*. Then you perceive, the body of our kingdom  
How foul it is; what rank diseases grow,  
And with what danger, near the heart of it.

War. It is but as a body yet distemper'd;  
Which to his former strength may be restor'd,  
With good advice, and little medicine:—  
My lord Northumberland will soon be cool'd.'

Act iii., Scene 1.

"Is the formation of abscess referred to in Richard's prophecy?

"The time will come, that foul sin, gathering head,  
Shall break into corruption.'

Act iii., Scene 1.

"The archbishop's reasons for joining the insurrection are couched in purely medical forms of thought. The state of the times is as a burning fever brought on by surfeiting; infectious also, and to be cured only by loss of blood. This is the prescription; but the hand of the ecclesiastic is not ready to carry it into effect, even under the figurative character of national physician. *Ecclesia abhorret a sanguine*, and therefore the priest comforts himself with the idea that he joins the rebels only for the purpose of dieting the rankness and of purging the obstructions of the social state. Though the argument may be illogical, the distinction drawn is very curious from our point of view.

"Archbishop. Wherefore do I this? so the question stands.

Briefly to this end. We are all diseas'd;  
And, with our surfeiting, and wanton hours,  
Have brought ourselves into a burning fever,  
And we must bleed for it: of which disease  
Our late king, Richard, being infected, died.  
But, my most noble lord of Westmoreland,  
I take not on me here as physician;  
Nor do I, as an enemy to peace,  
Troop in the throngs of military men:  
But rather shew a while like fearful war,  
To diet rank minds, sick of happiness;  
And purge the obstructions, which begin to stop  
Our very veins of life!

Act iv., Scene 1.

"In the following passage the same speaker refers to the surgical fact, that a broken bone after union becomes stronger than before.

"Archbishop. 'Tis very true:—  
And therefore be assur'd, my good lord marshal,  
If we do now make our atonement well,  
Our peace will, like a broken limb united,  
Grow stronger for the breaking.'

Act iv., Scene 1.

"Falstaff's physiological essay on the character of Prince John is as replete with old medical theory as it is with wit.

"Falstaff. Good faith, this same young sober-blooded boy doth not love me: nor a man cannot make him laugh;—but that's no

marvel, he drinks no wine. There's never any of these demure boys come to any proof; for thin drink doth so over-cool their blood, and making many fish-meals, that they fall into a *kind of male green sickness*; and then, when they marry, they get wenchers: they are generally fools and cowards;—which some of us should be too, but for inflammation. A good sherris-sack hath a two-fold operation in it. *It ascends me into the brain; dries me there all the foolish and dull and crudy vapours which environ it:* makes it apprehensive, quick, forgetive, full of nimble, fiery, and delectable shapes; which deliver'd o'er to the voice (the tongue), which is the birth, becomes excellent wit. The second property of your excellent sherris is,—*the warming of the blood; which, before cold and settled, left the liver white and pale,* which is the badge of pusillanimity and cowardice: but the sherris warms it, and *makes it course from the inwards to the parts extreme.* It illumineth the face; which, as a beacon, gives warning to all the rest of this little kingdom, man, to arm: and then *the vital commoners, and inland petty spirits, muster me all to their captain, the heart;* who, great and puffed up with his retinue, doth any deed of courage; and this valour comes of sherris: So that skill in the weapon is nothing without sack; for that sets it a-work: and learning, a mere hoard of gold kept by a devil, till sack commences it, and sets it in act and use. Hereof comes it, that Prince Harry is valiant: for the cold blood he did naturally inherit of his father, he hath, like lean, sterile, and bare land, manured, husbanded, and tilled, with excellent endeavour of drinking good, and good store of fertile sherris; that he is become very hot and valiant. If I had a thousand sons, the first principle I would teach them should be,—to forswear thin potations, and addict themselves to sack.'

*Act iv., Scene 3.*

“Thin drink and fish meals over-cool the blood, and occasion ‘a kind of male green sickness.’ The physiology of this opinion is unquestionably sound, for a low diet would, above all things, tend to impoverish the blood. The phrase, ‘a kind of male green sickness,’ obviously indicates that Shakespeare knew that green sickness, *chlorosis*, was a disease almost peculiar to women. He refers to its ordinary form in that most poetic passage of *Twelfth Night*, as ‘a green and yellow melancholy,’ which fed on the damask cheek of the love-sick virgin.

“The remarkable medical word, inflammation, which was coined upon a false theory of the phenomena of that abnormal state of nutrition, which still, both in medical and common parlance, are expressed by this term, would appear to have been employed by Shakespeare to designate merely a state of excitement from strong drink. It is, indeed, the only place in which Shakespeare makes use of the word, and I am not aware that others have employed it in a non-medical sense. Milton uses it in the strictly medical sense.

“‘Dire inflammation, which no cooling herb,  
Nor medicinal liquor can assuage.’—*Samson Agonistes.*



“ The first of the two-fold operations of sack is founded upon a singular theory of Hippocrates, which will be best given in this place by a quotation from the learned ‘ History of Physic,’ by Daniel Le Clerc, written in Shakespeare’s century.

“ ‘ *Of the Brain.*—The brain is reckoned by Hippocrates among the glands, because it appeared to him of the same nature, being white, fryable, and spongy, as they were. And he believed that the brain sucked up the superfluous humours of the body, like the other glands, which being all of a spongy nature, imbibe, says he, moisture easily.

“ ‘ But there is this further of the brain; that the head being hollow and round, draws incessantly, like a sort of cupping-glass, the moisture from the rest of the body, which rises in a vapour; after which, it being over-charged, it sends it down to the lower parts, especially the glands, from whence comes defluxions and catarrhs,

“ ‘ Hippocrates, in some other places, makes the brain the seat of wisdom and understanding, although, as we have seen before, he lodges the soul, which is the same thing with the understanding, in the left ventricle of the heart.’

“ The crudy vapours which environ the brain are thus explained as the moisture which rises to this organ ‘in the form of a vapour,’ and which, being of a watery nature from thin potations, Sir John would, no doubt, think foolish, dull, and crude, in comparison with the more stimulating and generous exhalations of a good ‘sherris sack.’ It will be observed that Shakespeare follows Hippocrates in attributing not only this humoral function, but also the intellectual function, to the cerebral organ, or rather, in confounding the two together.

“ ‘ The second property of your excellent sherris’ has reference to another theory of Hippocrates, namely, that the veins, which were thought the only blood-vessels, had their origin in the liver. The father of medicine maintained that they come from the liver; the arteries from the heart. It appears, however, that in different parts of his works he expressed different opinions on the relations existing between the veins and the heart. The origin of the veins, however, in the liver is, at least in one place, decidedly expressed by him, and was by his successors developed into an article of physiological faith, which continued to be held even to Harvey’s times. The following passage, from the biography attached to the Sydenham Society’s edition of the ‘ Works of Harvey,’ states this fact clearly.

“ ‘ In ancient times, indeed, the veins were regarded, as they are esteemed by the vulgar at the present hour, as the principal vessels of the body; they only were once believed to contain true blood; the arteries were held to contain at best but a little blood, different from that of the veins, and mixed accidentally in some sort with the vital spirits, of which they are the proper conduits. In

former times, farther,—times anterior to Harvey, whether more remotely or more nearly,—the liver, as the organ of the hemapoesis, was regarded as the source of all the veins, or of all the proper blood-vessels; the heart, as the generator of heat and the vital spirits, was viewed as the mere cistern of the blood, whence it was propelled by the act of inspiration, and whither it reverted during the act of expiration, its flow to this part of the body or to that, being mainly determined by certain excitations there inherent or specially set up. By and by, however, the liver was given up as the origin of the venous system generally; but such anatomists as Jacobus Sylvius, Realdus Columbus, Bartholomæus Eustachius, and Gabriel Fallopius, may be found opposing Vesalius in regard to the origin of the vena cava, and asserting that it takes its rise from the liver, not from the heart, as the great reformer in modern anatomy had maintained.'—*The Life of Harvey*, p. 54.

"We must not overlook the very distinct terms in which Shakespeare, in this passage, refers to the motion of the blood, 'and makes it course from the inwards to the parts extreme.'

" 'The vital commoners and inward petty spirits muster me all to their captain, the heart.' This hypothesis, that the heart was the head quarters of the vital spirits which permeated the body through the arteries, adopted from Galen, was held, as Dr. Willis has shown, even by those anatomists who have been put forward as rivals to the great discoverer of the heart's true function; thus Servetus, in the much discussed passage of the 'Restitutio Christianismi,' says, 'The vital spirit has its origin in the left ventricle, the lungs assisting especially in its generation; it is a subtle spirit. Also Cæsalpinus, whose guesses at the heart's function have been put forward to detract from Harvey's originality, held that "the dilatation of the heart and arteries was due to the effervescence of the spirit."'

"The clearest, but most succinct account which I have met with of the physiological opinions of the sixteenth century, is in that wonderful melange of learning, dirt, and humour, 'The History of Garagantua and Pantagruel,' book iii., chap. 3. Rabelais, who was both a practising physician and a medical author, having translated and published some of the works both of Hippocrates and Galen, here condescends to place before the general public, and truly in the vernacular of his country, a concise account of the opinions which his brethren held it almost a matter of professional honour to conceal from the vulgar gaze under the cloak of a dead language. So far as I am able to judge, however, this clear-sighted exposition is, in many respects, far in advance of the medical doctrines of the period, as might indeed have been expected from the almost miraculous insight of its author, whose disguise of buffoonery scarcely concealed a most unsafe originality of thought, and saved him from the dire penalties which would otherwise inevitably have attended it. In another passage which I have quoted under Corio-

lanus, Rabelais expresses the doctrine of the function of the liver which is implied in Falstaff's disquisition, namely, that the liver conveys blood through the veins for the good of the whole body.

“ ‘ The intention of the founder of this microcosm is, to have a soul therein to be entertained, which is lodged there as a guest with its host, that it may live there for a while. Life consisteth in blood; blood is the seat of the soul; wherefore the chiefest work of the microcosm is to be making blood continually.

“ ‘ At this forge are exercised all the members of the body; none is exempted from labour, each operates apart, and doth its proper office. And such is their hierarchy, that perpetually the one borrows from the other, the one lends the other, and the one is the other's debtor. The stuff and matter convenient, which nature giveth to be turned into blood, is bread and wine. All kinds of nourishing victuals is understood to be comprehended in these two, and from hence in the Gothish tongue is called companage. To find out this meat and drink, to prepare and boil it, the hands are put to work, the feet to walk and bear up the whole bulk of the corporal mass; the eyes guide and conduct all; the appetite in the orifice of the stomach, by means of a little sourish black humour, called melancholy, which is transmitted thereto from the milt, giveth warning to shut in the food. The tongue doth make the first essay, and tastes it; the teeth do chew it, and the stomach doth receive, digest, and chilify it. The mesaraic veins suck out of it what is good and fit, leaving behind the excrements, which are, through special conduits for that purpose, voided by an expulsive faculty. Thereafter it is carried to the liver, where it being changed again, it by the virtue of that new transmutation becomes blood. What joy conjecture you, will then be found amongst those officers, when they see this rivulet of gold, which is their sole restorative? No greater is the joy of alchymists, when, after long travail, toil, and expense, they see in their furnaces the transmutation. Then is it that every member doth prepare itself, and strive anew to purify and to refine this treasure. The kidneys, through the emulgent veins, draw that aquosity from thence, which you call urine, and there send it away through the ureters to be slipped downwards; where, in a lower receptacle, and proper for it, to wit, the bladder, it is kept, and stayeth there until an opportunity to void it out in his due time. The spleen draweth from the blood its terrestrial part, viz., the grounds, lees, or thick substance settled in the bottom thereof, which you term melancholy. The bottle of the gall subtracts from thence all the superfluous choler, whence it is brought to another shop or work-house to be yet better purified and fined, that is, the heart, which by its agitation of diastolic and systolic motions so neatly subtilizeth and inflames it, that in the right side ventricle it is brought to perfection, and through the veins is sent to all the members. Each parcel of the body draws it then unto itself, and, after its own fashion, is cherished and alimented by it. Feet, hands, thighs, arms, eyes, ears, back, breasts, yea, all; and

then it is that who before were lenders, now become debtors. The heart doth in its left-side ventricle so thinify the blood, that it thereby obtains the name of spiritual; which being sent through the arteries to all the members of the body, serveth to warm and winnow the other blood which runneth through the veins. The lights never cease, with its lappets and bellows, to cool and refresh it; in acknowledgment of which good, the heart, through the arterial vein, imparts unto it the choicest of its blood. At last it is made so fine and subtle within the rete mirabile, that, thereafter, those animal spirits are framed and composed of it; by means whereof the imagination, discourse, judgment, resolution, deliberation, ratiocination, and memory, have their rise, actings, and operations.'

"This certainly is a nearer approach to Harvey's discovery than any I have elsewhere met with in the physiology of the period, and might by a liberal interpretation be taken to imply, that what Shakespeare calls 'the nimble spirits in the arteries,' and 'the vital commoners and inland petty spirits,' was really blood which had been spiritualized or aerated in the lungs.

"The origin of the old opinions appears to have been the following passage in Hippocrates' 'Book on Aliments:—'The root of the veins is the liver, and the root of the arteries is the heart; and from them blood and spirits are carried to all parts, and heat passes with the same.'

"In the following passage two similies are mixed with some want of clearness. The 'venom of suggestion,' or evil insinuations, acting as a ferment, might cause the contents of a closed barrel to expand, so that the vessel would leak but for the strength of its bonds. The supposed power of poison to swell and burst the body is expressed in several other passages.

" ' *King Henry*. Learn this, Thomas,  
And thou shalt prove a shelter to thy friends;  
A hoop of gold to bind thy brothers in:  
That the united vessel of their blood,  
Mingled with venom of suggestion,  
(As, force perforce, the age will pour it in,)  
Shall never leak, though it do work as strong  
As aconitum or rash gunpowder.' *Act iv., Scene 4.*

"When Romeo applies to the apothecary for poison, he asks for 'soon speeding gear' which will kill 'as violently as hasty powder fir'd.' The above passage shows the poison which Shakespeare thought capable of this immediately fatal effect, aconite, which is indubitably one of the most virulent poisons with which, even at the present day, we are acquainted. Pereira says of it, 'The root is undoubtedly one of the most fatal indigenous poisons,' and of its alkaloid, aconitina, 'in one case, one-fifteenth of a grain had nearly proved fatal;' and his editor, Dr. Taylor, says, 'a dose of a tenth of a grain would probably destroy life with great rapidity. It



is the most virulent poison known, not excepting hydrocyanic acid.'  
—vol. ii. p. 695.

"The king's illness is called an apoplexy, a term even now more loosely and vaguely employed by medical men than almost any other. It might be rightly applied to a sudden affection of the brain, caused by the 'incessant care and labour of his mind;' but failing sight and giddiness of the brain might equally arise from failure of the heart's action; defective supply of blood to the brain, being attended with the same symptoms of its failing function, as interference with its due nutrition from congestion or pressure. The suspension of the respiratory movements so that the 'downy feather' stirred not, though it lay at the gates of breath, would indicate that the sudden illness, supervening on the shock of good news, was faintness, and not apoplexy.

" ' *K. Henry*. And wherefore should this good news make  
me sick?

Will fortune never come with both hands full,  
But write her fair words still in foulest letters?  
She either gives a stomach, and no food,—  
Such are the poor, in health; or else a feast,  
And takes away the stomach,—such are the rich,  
That have abundance and enjoy it not.

I should rejoice now at this happy news;  
And now my sight fails, and my brain is giddy:

O me! come near me, now I am much ill. [Swoons.

" ' *P. Humphrey*. Comfort, your majesty!

" ' *Clarence*. O, my royal father!

" ' *Westmoreland*. My sovereign lord, cheer up yourself,  
look up!

" ' *Warwick*. Be patient, princes; you do know, these fits  
Are with his highness very ordinary.

Stand from him, give him air; he'll straight be well.

" ' *Cla*. No, no; he cannot long hold out these pangs;  
The incessant care and labour of his mind  
Hath wrought the mure, that should confine it in,  
So thin, that life looks through, and will break out.

. . . . .

" ' *War*. Speak lower, princes, for the king recovers.

" ' *P. Humph*. This apoplexy will certain be his end,

" ' *K. Henry*. I pray you take me up, and bear me hence  
Into some other chamber: softly, pray.  
Let there be no noise made by gentle friends  
Unless some dull and favourable hand  
Will whisper music to my weary spirit.

. . . . .

Enter PRINCE HENRY.

“ ‘ *P. Henry.*                    Heard he the good news yet?  
Tell it him.

“ ‘ *P. Humph.*    He altered much upon the hearing it.

“ ‘ *P. Hen.*    If he be sick  
With joy, he will recover without physic.

. . . . .

By his gates of breath  
There lies a downy feather which stirs not:  
Did he suspire, that light and weightless down  
Perforce must move.’

“ The quick recovery of intellectual powers shows that Prince Humphrey miscalled his father’s illness in naming it an apoplexy. The whole scene describes the illness as faintness from exhaustion. It concludes with an expression of want of power of further speech, power and desire to think being retained; though it must be owned that no reference had been made to pulmonary disease previous to the assertion that the lungs were wasted.

“ ‘ *K. Henry.* More would I, but my lungs are wasted so,  
That strength of speech is utterly denied me.’

*Act iv., Scene 4.*

“ In the following passage Prince Henry’s excuse for removing the crown affords another reference to the ‘ tinct and multiplying medicine,’ the *aurum potable*, as it was called by the old physicians, a term evidently in the poet’s thought when he wrote the line in italics.

“ ‘ I spake unto the crown as having sense,  
And thus upbraided it: the care on thee depending,  
Hath fed upon the body of my father;  
Therefore, thou, best of gold, art worst of gold.  
Other, less fine in carat, is more precious,  
*Preserving life in med’cine potable;*  
But thou, most fine, most honour’d, most renown’d,  
Hast eat thy bearer up.’

*Act iv., Scene 4.*

We would, in conclusion, especially call the notice of our readers to the extraordinary amount of information contained in Dr. Bucknill’s preface, which chiefly consists in a most interesting account of the state of medicine and the medical corporations in the middle ages.

*On the Theory and Practice of Midwifery.* By FLEETWOOD CHURCHILL, M. D., M. R. I. A.; Fellow and Professor of Midwifery and Diseases of Women and Children in the King and Queen's College of Physicians in Ireland. Illustrated by one hundred and nineteen highly-finished wood engravings. Fourth Edition, corrected and enlarged. London: Henry Renshaw, 356, Strand. Dublin: Fannin and Co, 41, Grafton-street. 1860. Fcap 8vo, pp. 705.

*Clinical Lectures on the Diseases of Women and Children.* By GUNNING S. BEDFORD, A. M., M. D.; Professor of Obstetrics, the Diseases of Women and Children, and Clinical Midwifery, in the University of New York. Sixth Edition, carefully revised and enlarged. New York: Samuel S. and William Wood, 389, Broadway. 1860. 8vo, pp. 653.

AMONGST those to whom the Dublin School of Midwifery owes its fame, Fleetwood Churchill holds a prominent position. None have done more to advance obstetric medicine in this country. In the United Kingdom of Great Britain and Ireland, throughout our vast colonial possessions, "over which the sun never sets," there scarcely exists a library, however small, belonging to a practitioner of medicine, that is not enriched by the possession of some one of the author's works. But we may go further, and say that Dr. Churchill's productions have conferred benefits on other lands than ours, his labours being highly appreciated over the continents of Europe and America. In what consists the value of Dr. Churchill's works? To what circumstance is due their extensive circulation, and why are so many new editions demanded? He owes no small portion of his fame to his careful and persevering research. His works are not so much original, as careful and faithful compilations from those of others. In perusing any of the author's editions, we do not so much read his own views as those of other great and illustrious physicians, who have been the pioneers of our science, and the ornaments of our schools. Hence, the real value of these works. They are expositions of the views of all the highest authorities on the subject of which each treats, and are thus equally indispensable to the student, the medical practitioner, and the lecturer. No one feels comfortable without his familiar name upon their shelves.

The volume in question, "*On the Theory and Practice of Midwifery*," now appears for the fourth time, and it may be deemed superfluous, that we, who have so often spoken

in high terms of its former editions, should give any lengthened notice on the present occasion. We are induced, however, to expend more space than we otherwise should, on account of the following circumstances. We are informed he "has added what he has found wanting, pruned what appeared redundant, and corrected what was vaguely or carelessly expressed." He has reconsidered thoroughly the question of craniotomy, and been enabled to "define more precisely the grounds of the operation, and to restrict its limits in a more definite manner," having been led to do so, in consequence of a controversy which had lately been forced upon him, relative thereto. This has caused the addition of a new chapter under the head of "Obstetric Morality." We are also presented with another on "Spurious Pregnancy." These we think sufficient reasons in themselves for giving a rather lengthened notice; but we are strengthened in that opinion when we read the following passage from the preface. Having alluded to an unpleasant controversy that had formerly existed between himself and Dr. F. Ramsbotham, relative to the author's copying the latter's plates without acknowledgment, Dr. Churchill apologises to that gentleman and all others who deem themselves thus aggrieved,—a step more dignified and correct than the curt and rather uncourteous manner he wrote in on a former occasion,—and concludes by saying, "I am too old to wish for quarrels, and too busy to have time for controversy." Dr. Churchill, then, having arrived at the acme of his professional career, and at a period of life when leisure to some extent is necessary to the comfort of the autumn of his life, may not feel inclined to spend the little time his extensive practice has left him in revising for new editions, or in giving to us any more original works. This, then, may be the last edition we shall see of his "Practical Midwifery."

The arrangement of the volume is precisely similar to that of former editions, so well known to every practitioner. The anatomy, normal and abnormal, of the female pelvis; the anatomy and pathology of the female organs of generation; their physiology, &c., and the signs of pregnancy; abortion; the occurrence of labour; labour in all its forms, and the operations that may be required in each; accidents connected with parturition; some of the most important diseases incident to childbed; and lastly, a chapter of 22 pages on "Obstetric Morality." To some of these subjects, which we left unnoticed on former occasions, we shall now draw the reader's attention.

The admirable epitome of the anatomy, physiology, and



some of the disorders of the female organs of generation, commencing the work, shows marks of revision, bringing the subject nearly up to the present day; but we must be allowed, with the greatest respect to the author, to allude to one or two subjects which we think demand some observations. Amongst the general deformities of the pelvis, there is one of peculiar interest, examples of which are rare, and the pathology of which is obscure. We allude to that originally described by, and called after, the illustrious Naegele, or the "oblique distortion." The author is noted for the care with which, so far as possible, he draws from all available resources of information anything tending to improve or advance his favourite science; and we are, therefore, surprised that he has permitted to escape his notice a case which occurred in this city, and which threw considerable light on the cause of this deformity. He has only stated that "it is extremely difficult to assign the cause of oblique distortion. Naegele states that he could detect no traces of rickets or mollities ossium in any of his cases. He (Naegele) believes that it neither arises from external causes nor from internal disease, but from an original anomaly of development. Dr. Rigby, however, thinks that ulcerative absorption must have existed at the sacro-iliac juncture, probably in early life." The case to which we allude occurred in the Dublin Lying-in Hospital, is mentioned in Drs. Johnston and Sinclair's Report of that Institution, and was published *in extenso* in this Journal for August, 1855. The nature of the deformity was discovered during labour, and its existence verified after death; so far, we believe, quite an exception to every other case on record. Moreover, the post-mortem examination showed decided traces of former disorganization of the soft parts about the sacro-iliac synchondrosis, corresponding to the flattened side of the pelvis, and a cicatrix was found on the skin over the joint of that side. The history of the childhood of the patient, as given by her mother, corroborated the appearance of the parts on post-mortem examination: in fine, no one, on reading the case, could avoid inclining to the same conclusion as Dr. Rigby, that in these cases "ulcerative absorption must have existed at the sacro-iliac junction, probably in early life." Indeed, this distortion, we consider, may exist amongst both sexes in this country, to a greater extent than is supposed, though it may escape detection. In the male, it is easy to understand how this state of the pelvis may not attract the particular attention of the pathologist; and in many females it may exist to such an extent as not to encroach obstructively on the pelvic space, and thus render natural delivery

impossible. On more than one occasion we have detected slight flattening of one side of the pelvis during labour, which subsequently progressed favourably, and terminated in convalescence; and we have been assured by an eminent physician of this city, that he has had frequent opportunities of observing disease of one or other sacro-iliac synchondrosis amongst the children of the poor in hospital practice.

It may arise from the fact that Dr. Churchill is an elaborate compiler, that sometimes his reader supposes he has not any very fixed idea on certain subjects himself. We occasionally find throughout his works what certainly appear to be contradictions; this is to be regretted, especially when they are so largely used by students. As an example, at page 53 he gives the following description of the menstrual discharge: "That it is excreted by the uterus, has been ascertained in cases of prolapse and inversion of the organ; and that it is really a *secretion* by its lining membrane, and *not blood* mechanically filtered through it, is, I believe, now generally admitted." But at page 57 he says: "It (the menstrual discharge) consists at first of *pure blood*, but in its passage through the vagina its fibrine is probably discoloured by the acid secretions of that part." Now, from the first of these two passages, it would appear that Dr. Churchill coincides with what he describes to be the generally received opinion, viz., that the menstrual discharge is a secretion of the mucous membrane, and not effused blood; whereas in the second, he distinctly states that it is pure blood at first, but that it becomes materially altered by the vaginal secretion subsequently. The only way we can discover for him to get out of this dilemma is, to say that pure blood can be *secreted* from a mucous membrane, and that it is so secreted from that of the uterus, and not poured out. Are we to believe such a theory? However the flow during menstruation may contain other matters of an excrementitious nature, surely, the chief of its components, as proved microscopically, is blood; and the discharge itself, to our mind, certainly cannot deserve the title of a secretion.

The author is more precise with respect to the two important questions arising out of the formation of the corpora lutea, viz., are they the result of pregnancy only, and do their presence indicate previous impregnation? and, if not solely the result of pregnancy, can the corpora lutea of pregnancy be distinguished from that of menstruation? Some time since, our Dublin school had no great doubts relative to true and false corpora lutea or those of pregnancy and menstruation, but latterly much discussion has arisen on the subject. The author,

having quoted the various authorities on the subject, gives the views of Dalton as follows:—

“The corpus luteum of pregnancy arrives more slowly at its maximum of development, and afterwards remains for a long time as a very noticeable tumour, instead of undergoing a process of rapid atrophy. It retains a globular or only slightly flattened form, and gives to the touch a sense of considerable resistance and solidity. Internally it has an appearance of advanced organization, which is wanting in the corpus luteum of menstruation. Its convoluted wall, particularly, attains a greater development, this portion measuring sometimes as much as three sixteenths to one-fourth of an inch in thickness; while in the corpus luteum of menstruation it never exceeds one-eighth, and is almost always less than that. This difference in the thickness of the convoluted wall is one of the most important points of distinction. It will be much more striking when viewed *relatively to the size of the coagulum*. The colour is not by any means so decided a yellow, but a more dusky and indefinite hue. If the period of pregnancy be at all advanced, it is not found, like the corpus luteum of menstruation, in company with unruptured vesicles in active process of development. Thus,” concludes Dr. Churchill, “if due care be taken, the corpus luteum of pregnancy can be distinguished from the changes which follow ordinary ovulation, by whatever name they are called; and, therefore, the presence of such a corpus luteum is *as sure an evidence of pregnancy as it has ever been considered*.”

The chapter on Spurious Pregnancy, a new feature in the work, the author frankly confesses, is chiefly compiled from the only monograph upon the subject, by Professor Simpson. This is a most interesting chapter, and a valuable addition to the volume. In a medico-legal, as well as in a purely medical point of view, this subject is one of great importance. And it is well that all students in medicine should be put in possession of whatever is known on the matter. Here we have pregnancy simulated in a most remarkable manner, and error in diagnosis may give rise to serious mischief. Pseudo-pregnancy may occur at any age. “Dr. O’Ferrall has recorded,” says the author, “one case in a girl aged thirteen. I have seen one in another aged seventeen. Dr. Simpson thinks the complaint as frequent during the first year after marriage as at any other time. I have seen it in a woman who had borne several children, and Dr. Montgomery thinks it most frequent at the climacteric period.” The symptoms are clearly defined by the author, but the greatest point of diagnosis is, according to Dr. Simpson, that, “however closely all the ordinary symptoms of real pregnancy may be represented and simulated in the

spurious affection, and however minutely even the individual idiosyncrasies sometimes seen in the former may be imitated in the latter, there is usually some deviation from the ordinary course of events, and some difference in the order and correspondence of the ordinary phenomena, which may serve to put you on your guard, and lead to the discovery of the true state of affairs." Auscultation will afford but negative evidence; examination, external and vaginal, may not clear up the case satisfactorily, but placing the patient fully under the influence of chloroform at once reveals the true state of affairs; the abdomen then becomes relaxed and perfectly subsides,—thus giving ample opportunity to test the condition of the abdominal organs. The question then arises, what is the pathology of the complaint? in our author's words, "what is the enlargement? Is it simply a gaseous distention?" The ingenious professor of Edinburgh, we are informed, put this to test by a novel but demonstrative experiment. He introduced a tube into the rectum, placing its free end under water, and then, putting the patient under the influence of an anæsthetic, watched for the appearance of bubbles on the water as the abdomen subsided. As the water remained undisturbed, Dr. Simpson was forced to look for another theory than gaseous distention; so he believes "the phenomenon most probably depends on some affection of the diaphragm, which is thrown into a state of contraction, and pushes the bowels downwards into the abdominal cavity." Concerning which theory Dr. Churchill, in our opinion, most justly remarks, that although he has no better explanation to offer, he confesses himself "far from satisfied" with it.

The classification of labours used by Dr. Churchill in his original editions has not been altered in the present. We have nothing new to observe relative to this portion of the volume, further than that each subject is brought up to the present period, and that all the statistics which have been published since the appearance of the third edition are inserted in the present one. Besides, the author has enriched this section of his work with much more of his own experience than was to be met with in former editions. This, in our opinion, adds greatly to the value of the present volume. There is one matter, however, on which we would wish to make one or two observations. The author lays considerable stress upon the stage of the labour in which delay occurs; attaching much more importance to tediousness in the second or expulsive, than in the first or dilating stage; and, no doubt, in the main he is correct in so doing. But he founds a division of orders of labour from



this in a manner which is not in accordance with our ideas on the point. For instance, "tedious labour" he defines thus:—"The head of the child presents, and the labour is terminated without manual or instrumental assistance, but it is prolonged beyond twenty-four hours from circumstances which occasion delay in the first stage. The placenta is expelled naturally." Then powerless labour is, when "labour is prolonged in the second stage, by causes which act on the uterine power primarily or secondarily, rendering the pains feeble and inefficient, or totally suppressing them. In consequence of the stage at which the delay takes place, certain symptoms arise which render speedy delivery imperative. The pelvis is sufficiently roomy." Now, these definitions to our mind, are too diffuse, nor do we conceive them justifiable.

We object to a *precise* period or duration—as originally introduced by Denman—being used as an element in the definition of any description of labour. A labour may be natural in every respect, and terminate within the stated period of twenty-four hours, even having each stage in due proportion, and yet from its after effects, show that it did not deserve the name of natural; but, on the contrary, that it should have been *made* instrumental. Twenty-four hours in labour to one woman might be a natural duration, but it might be an unnatural one to another. Then we do not see why inertia should not set in during the first stage as well as during the second; and that when occurring in the first stage, and causing delay, why that should not also be called a "powerless labour." We would rather throw away fixed classifications and set definitions, as much as possible, in practical midwifery, and call each case as it arrives:—Thus, tedious or inert in the first stage; tedious or inert in the second; tedious or inert in both stages. Obstructed in the first stage, in the second, and so on. Dr. Churchill does not look upon delay in the first stage of so great importance as we do. Certainly it is by no means so much to be dreaded as delay in the second; nevertheless, we confess it has been our experience that considerable delay in the first stage—whether the membranes were ruptured or not, but especially if ruptured—was not free from danger; and under any circumstances was a bad preparation for a happy second stage. Dr. Churchill gives a lengthened table of the duration of labour in the first and second stages, taken from the registry of the late Western Lying-in Hospital, Arran-quay, in this city, the data of which were entered under the inspection of Dr. Speedy and himself.

This table is unique, so far that we have never seen such a one elsewhere than in Dr. Churchill's book.

Now, had each case come under the immediate notice of either Dr. Speedy or Dr. Churchill; had they, with their knowledge and tact in midwifery, noted the duration of each stage in each case themselves; we would look upon this as one of the most valuable tables in our possession. But, when it is remembered that these data were, for the most part at least, registered by the students attending the Western Lying-in Hospital—which was chiefly, indeed, almost completely, an extern charity—and noted from their recollection; when we consider the reliance that could be placed upon an uneducated student's power of distinguishing the progressive dilatation of an os uteri, and the difficulty that must often have been experienced, in fixing the precise time of labour that had elapsed prior to their taking charge of the case; we confess these statistics are not of much value.

The chapters on Puerperal Fever and its allies, are much improved, full of information up to the present date, and will be found invaluable to the student and practitioner. The care that the author has taken in revising this portion of his volume is deserving of the highest praise.

We have a most valuable addition to the present volume of a chapter headed "Obstetric Morality." This title had been chosen by a contributor to "The Dublin Review" of April, 1858, for a paper written for the purpose of showing "the immorality of the operation of craniotomy *under any circumstances*, if the child be alive." As the exponent of this, one of Dr. Churchill's earliest publications was chosen; and the writer's tone towards Dr. Churchill was, to use his (Dr. C.'s) own language, "somewhat uncharitable in its imputation of motives." Dr. Churchill felt himself called upon to answer this article, and he now presents us with a reprint of his reply, which, we are bound to say, while it is free from the slightest expression that could hurt the feelings of the most sensitive member of the Church of Rome, is remarkable for its sound and straightforward reasoning, and its crushing refutation of the doctrines brought forward by his opponent.

As the tendency of a segment of society of the present day is decidedly mediæval, it is no matter of surprise to us, that this subject, which caused so much debate long since, should be exfoliated again, and endeavoured to be forced upon the people. The question *has* been brought forward in 1858, and "craniotomy under any circumstances, if the child be alive,"

has been condemned on moral, religious, and obstetrical grounds.

The writer in the "Dublin Review" had not the assurance to base his theological objection to this operation merely on the fact that the Church of Rome forbade it, but having deduced his argument from Holy Scripture—"an authority," says our author, "to which I implicitly bow: we have, so far, common ground." We shall briefly follow our author's arguments on the theological objections which involve the moral, and which, if confuted, the medical questions are not of much importance *to the obstetrician*.

The destruction of an unborn babe under any circumstances is a breach of the Sixth Commandment, showed by the edict, "whoso sheddeth man's blood, by man shall his blood be shed, for in the image of God made he man."

"If," says the author, "the latter text be more than authorization of capital punishment for murder, which I do not deny, it is clear that it must be subject to limitation; otherwise it would prohibit killing in self-defence, or in defence of another, which is considered lawful by the Roman Catholic Church; and it would render war unlawful. If, then, *it be thus modified, there is no reason why the limitation may not be extended so as to include the operation in question*, provided I can show that it cannot justly be considered a breach of the Sixth Commandment."

Dr. Churchill then defines what murder is, as laid down by the highest law authorities, all of whom assert the necessity of a *malice prepense, or aforethought*, attended by such circumstances as are the ordinary symptoms of a wicked, depraved, and malignant spirit—necessary to distinguish murder from any other description of homicide, and continues—

"I think it will be at once admitted that killing a child in utero, which I shall prove can be by *no means born alive*, and which *must* die in a few hours, but the prolongation of whose life, *even for those few hours*, will most seriously, if not irreparably, endanger that of the mother, cannot be brought under the definition of murder. There is no malice aforethought, expressed or implied; it is done from necessity, and without any evidence of a 'wicked, depraved, or malignant spirit;' it is not, therefore, in any true sense murder. Had there been the slightest reason for thinking so, I have no doubt that there would have been a provision made by law, just as there has been against criminal abortion; so far from this, 'an infant in its mother's womb, not being *in rerum naturâ*, is not considered by law as a person who can be killed *within the description of murder*.'—(1 Hale, P. C., p. 433.)"

Then comes the question of homicide, which is either justifiable, excusable, or felonious; justifiable when prescribed by law; "or is owing to some *unavoidable necessity*, as in the case of an attack on life, property, or chastity, when the death occurs in self defence," which is admitted by Roman Catholics, inasmuch as, the author informs us, the Most Rev. Dr. Cullen, in his book entitled, "What every Christian must know and do," says: "It is not a sin to defend your own life *or another's life*, chastity, or property of great value, when unjustly attacked, even though it cannot be defended without taking away the life of him who attacks it." So that the author continues:—

"I shall be able to show that craniotomy, under proper circumstances, is 'an *unavoidable necessity*,' and if, therefore, it be legally justifiable to take one life for the protection of another, we have precisely the conditions applicable to our case, with this additional justification, *that the life we take is forfeited*, i.e., it will inevitably cease, as the child *cannot* be born alive."

But the Roman Catholic Church believes that if the body of this child is destroyed, his soul is destroyed also. And this question is so important, that we shall be excused if, with the author, we quote his opponent on this point, *in extenso*:—

"It is no less certain that this soul which has been created by God, and infused into the body at the first moment of existence, has, in the language of holy David, been conceived in iniquities, that is, that it has inherited the stain inflicted on all his posterity by the prevarication of Adam. Nothing defiled can enter into heaven, and the defilement of this soul can only be washed out in the waters of baptism. To it, in common with all mankind, have been addressed the words of the Saviour: 'Unless a man be born again of water and the Holy Spirit, he cannot enter the kingdom of heaven.' It is strange that those who profess to be guided exclusively by Scripture should deny that the external rite of baptism is necessary to salvation, for it is plainly and repeatedly inculcated in the Word of God. That the second birth by water and the Holy Ghost, spoken of in John, iii., means the external rite of baptism, may be inferred from the fact that our Lord's disciples soon after began to baptize, as we learn from the beginning of the following chapter. The word 'to baptize' signifies 'to wash,' and on the very last occasion on which our Lord addressed his Apostles after his resurrection, He told them, 'All power is given to me in heaven and earth; going, therefore, teach ye all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Ghost.' When the people were melted to compunction of heart by St. Peter's first sermon, they asked what they should do. But Peter said to them: "Do penance and be bap-



tized every one of you, in the name of Jesus Christ, for the remission of your sins.' They, therefore, that received his word were baptized. That this baptism was by water is manifest by what occurred when Philip preached Jesus to the eunuch; for 'as they went on their way, they came to a certain water, and the eunuch said, See, here is water; what doth hinder me to be baptized? And they went down into the water, both Philip and the eunuch, and he baptized him.' Ananias told St. Paul, when sent to him by God, 'Rise up, and be baptized, and wash away thy sins.' So also, when St. Peter saw the Holy Ghost falling on the Gentiles, he exclaimed, 'Can any man forbid water, that these should not be baptized?' This idea is strongly conveyed in various places by St. Paul. 'Christ loved the Church,' he says, 'and delivered himself up for it, that he might sanctify it, cleansing it by the laver of water in the word of life.' Again, he calls the 'laver of water' the 'laver of regeneration, and renovation of the Holy Ghost,' alluding manifestly to our Lord's words (John, iii.), and thus clearly establishing that the regeneration, without which no one can enter into the kingdom of God, is baptism by water. 'Not,' he says, 'by works of justice which we have done, but according to His mercy He saved us, by the laver of regeneration, and the renovation of the Holy Ghost.' "

We shall now append Dr. Churchill's reply to this:—

"Now, putting aside the question of when the soul is first joined to the body, on which subject Holy Scripture is silent, I am quite prepared to admit, simply and implicitly, the authority of the texts quoted. I do not deny that baptism was by water, nor that baptism, is one of the sacraments, generally necessary to salvation; but all these texts involve one condition, viz., *the possibility* of baptism. This, I think, must be admitted *primâ facie*, and I object to apply such texts to cases for which we have no shadow of proof that they were intended. It appears to me that the blessings of baptism, and the penalties for its neglect, can be, and were intended only to apply to those children whose baptism was possible. The duty and the power must be correlatives. Now, of children dying in utero nothing whatever is said in Holy Scripture, yet my reviewer deduces from the texts above quoted the doctrine that the souls of such children are lost. As I have said, I cannot give him textual authority for the contrary, but I can adduce an example which proves my point completely. When the thief on the cross said, 'Lord, remember me when thou comest into thy kingdom;' the answer was, 'This day shalt thou be with me in paradise.' Of *his* salvation, therefore, there cannot be the slightest doubt, and—yet he was not baptized.

"Of course, if the reviewer had stated that the operation of craniotomy had been prohibited by the Roman Catholic Church, there would have been no necessity for argument. The members of that Church would feel bound by its decision, and it would have been no business of mine to contest the point; but as he has made

it depend upon reasoning from Holy Scripture, I have felt quite at liberty to question the accuracy of his conclusions. The teaching of the Church of England and Ireland, on the subject of baptism, is to be found in her Book of Common Prayer, and is so accessible, and, indeed, so well known, that any detail is quite unnecessary here. She recognises baptism as one of the sacraments 'generally necessary to salvation,' and declares that 'it is certain, by God's Word, that children which are baptized, dying before they commit actual sin, are undoubtedly saved.' But, in accordance with her declaration that 'Holy Scripture contains all things necessary to salvation; so that whatsoever is not read therein, nor may be proved thereby, is not to be required of any man that it should be believed as an article of faith, or be thought requisite or necessary to salvation;' not having found any expression as to the result of those dying unbaptized, when baptism is impossible, she is silent; content to leave their future lot to the loving-kindness and tender pity of Him who died for all.

"Morally and theologically, then, the case stands thus:—My reviewer contends that destroying the child in utero is murder. I have proved, on the highest legal authority, that this stigma is unjust, and that it does not come under any true definition of murder, inasmuch as it involves no malice; that it is even something less than justifiable killing, inasmuch as the child's death is inevitable without our interference; we do but hasten it.

"Again, he maintains that baptism being a sacrament essential to salvation, all children dying or destroyed in utero are lost. I say, on the contrary, that his authority from Scripture fails, inasmuch, as in the cases quoted, baptism was possible; whereas, in these it is not, whether the operation be performed or not; and I have given one undoubted instance of salvation without baptism, when its administration was impossible. For my own part, whilst I feel the tenderest regard for the lives of these innocents, and would do my best to preserve them, if that fail, I have no fears for their souls, for whom Christ died, but look forward with sure and certain hope to their resurrection to eternal life."

Having disposed of the moral and religious objections to the operation of craniotomy when the child is living, in order to preserve the life and health of the mother, Dr. Churchill proceeds to combat the obstetrical objections to the operation under these circumstances; and it is not to be wondered at, after handling subjects the consideration of which are, to so great a degree, beyond the sphere of his usual studies, in such an able and convincing manner, that when he comes to touch upon his own ground, he is peculiarly excellent. We have given, in copious extracts, the arguments *pro* and *con* on the moral and religious bearings of the case, as in these are contained the chief objections against the operation of craniotomy by the

Church of Rome, and as they may not be generally known to our readers. Having devoted so much space already to this notice of the author, we shall not give any sketch of the obstetrical side of the argument, the points of which are so well known to our obstetric readers. Suffice it to say, that this brilliant chapter forms one of the best digested dissertations on the operation of craniotomy, viewed in all its bearings, we have ever read, and, to our mind, is a complete and triumphant answer to the author's opponent. We consider Dr. Churchill deserves the thanks of the profession in giving a wide circulation to his "Obstetric Morality," and that he need make no apology for having added it to his volume in the form of an appendix.

In conclusion, if anything can augment the fame Dr. Churchill has already acquired, it is this fourth edition of his "Practical Midwifery," which contains as an appendix, one of the most important obstetric papers that has issued from the press for many years.

The next volume we have to notice is of very different nature from that of Dr. Churchill. Though so far resembling our first subject, as being connected with obstetric medicine, properly so called, yet it differs from Dr. Churchill's book, in consequence of its most peculiar style, and from the fact of its being compiled without any method whatever. Dr. Gunning S. Bedford, of New York, presents us with a sixth edition of his "Clinical Lectures on the Diseases of Women and Children." These lectures were given on the moment, and in the order that each case presented itself, so that we have a heap of subjects bundled together without any arrangement. The reader must, to enter into the spirit of this volume, conceive a lecture-room, with—so far as we can glean from the author—a consultation or examination room off it; the class occupy the benches of the former; the professor examines his case in the latter; and then, introducing the patient to his audience, describes the symptoms, makes his diagnosis, prescribes, and gives a brief lecture on the pathology, symptoms, diagnosis, and treatment, to the class. This is a most admirable mode of teaching, and much sought after by the students of the University of New York, in which institution Dr. Bedford holds the obstetric chair, since he speaks of his *large and attentive class of pupils*.

Unlike by far the largest portion of our Young Ireland students, the attention of their American brethren is not distracted either by their peg-top trowsers, the slender hirsute crop on

their upper lip, or any stray matter bordering on the ridiculous, that may meet their eye or catch their ear. The students of New York, so far as the professor's class is concerned, are of a different stamp, and sit wholly intent upon the teaching of their master.

We have perused this volume most attentively, and have never yet read a book with more pleasure and profit. It is true the author's style is quaint, and would appear, were he not almost of the same standing, to be a plagiarism on that of an eminent and excellent Philadelphian professor. We are favoured with the complete conversation of the doctor with each of his patients, which has an extraordinary effect to us Britishers—such a style of medical writing not being the fashion amongst us. Perhaps, were it attempted by one or two, so that we might become familiarized with it, this method of writing might not only lose its strangeness, but be considered an instructive way of teaching a certain class of students, who might require some species of reading-made-easy to spoon-feed them with practical medicine. For our own part, we prefer a plain, continuous statement of the symptoms and diagnosis of a case, to the theatrical method of Dr. Bedford's teaching; and yet we were actually fascinated into reading his entire volume. To give the reader an idea of the professor's style, we shall transcribe a scene as enacted in his theatre. A certain Mrs. C. enters, and, having replied to many of the professor's queries, the scene continues thus:—

“ ‘Why do you think you have falling of the womb, Mrs. C.?’ ‘Because one of my neighbours told me so, sir.’ ‘Is that neighbour a doctor or a woman?’ ‘Oh! her name is Mrs. Mulligan. But the doctor told me so too.’ ‘What is Mrs. Mulligan's business?’ ‘She takes in washing, sir.’ ‘Does she practise medicine?’ ‘Oh! no, sir.’ ‘What does she know about falling of the womb?’ ‘I don't know, sir; but she told me that her cousin, Mrs. Higgins, had falling of the womb, and she knew I had it too.’ ”

The professor then turns to his class, and observes:—

“ ‘Well, gentlemen, this is one species of logic, and you will often meet with it in practice.’ ”

Then, again addressing Mrs. C.:

“ ‘When the doctor told you that you had falling of the womb, did he examine you before giving his opinion?’ ‘No, sir; he was Mrs. Mulligan's doctor, and he called over one day and said that Mrs. Mulligan was right, and I had a falling of the womb.’ ‘Did he order you to do any thing?’ ‘Yes, sir, he told me to put a plaster on my



back.' 'Did Mrs. Mulligan know that the doctor ordered the plaster?' 'Yes, sir, and she said it would cure me as it did Mrs. Higgins.' 'Did you use the plaster?' 'No, sir, I don't see how a plaster on my back could draw my womb up.' 'Nor I, either, my good woman.'"

Mrs. L. presents herself, who is aged 32; a widow, the mother of two children, the youngest of which is eight years old, when the following conversation ensues:—

"Well, madam, what is the state of your health?" 'Thank you, sir, I am much better.' 'Did you take the sulphur as directed?' 'Yes, sir.' 'Are your bowels more regular than they were?' 'Yes, sir, and my courses have returned upon me.'"

The professor then addresses the class:—

"The patient before you has suffered for the past two years from suppression of the courses. She also had been afflicted with bleeding piles. It was a case of vicarious menstruation. The indication I mentioned to you was to remove the constipation, which, no doubt, was the cause of the hemorrhoids."

To the patient:

"How are the piles, madam?" 'They don't trouble me now, sir.' 'I am glad of it, my good woman. Good morning.'"

The replies of the patients are often very characteristic; for instance, when the professor says to a poor woman, "Your child appears very sick, madam," and she answers, "He is *all that*, sir," who can be surprised at the question that follows:—"How many weeks were you crossing the Atlantic?" These are sufficient examples of the author's method of publishing his cases, which to some minds would appear ludicrous from its homeliness; but, supposing the contrary, we do not see that it tends to any advantage, but rather consumes a great deal of space which might be better occupied. We also have to find fault with a certain degree of pomposity, apparent throughout the work. Thus, talking of the absence of the secretion of milk, he calls it an "agalaxy." The functional derangements accompanying uterine disease he describes as "due to the action of the ganglionic department."

Again, addressing his students, he tells them that "soon you will be vested with all the rights and privileges of the *doctorate*; you will return to your homes, and, after having received the congratulations of friends, you will commence the responsible and arduous duties of your profession."

At page 100 he pours out an eulogium on woman. He

speaks of her as the tender and endearing being that should call forth "the admiration of the philosopher, and the fervid praises of the poet." Our philosopher, in fine, becomes so fervid, that he turns poet himself in woman's behalf, and, not having "wingéd words" at his own disposal sufficiently powerful and mellifluous for his purpose, he draws upon those of *our* national bard, and expresses woman's ministration to man thus:—

"There, drink my tears while yet they fall;  
Would that my bosom's blood were balm,  
And well thou knowest I'd shed it all,  
To give thy brow one minute's calm.  
Nay, turn not from me that dear face;  
Am I not thine—thine own loved bride—  
The one, the chosen one, whose place  
In life or death is by thy side?"

It would be something new to us, in this unromantic school of Dublin, to hear a jolly old professor spouting out the burning love lines of our dear departed Tommy, to a large class of embryo Irish doctors. What an effective thing it would be to have a bit of "Paradise and the Peri" declaimed *ore rotundo* at the introductory lecture of the College of Surgeons, Dublin. We wish some of our professors would take the hint, and enliven the prose of their prelections, by giving us a touch of the poets occasionally. But, as regards the author's quotation, we are cold enough to consider that the space occupied thereby might be better filled. Just after the recitations comes a case, headed, "Critical period of female life—final cessation of the menstrual function in a widow, aged forty-nine years;" thus, with the rapidity of the Peri herself, the author "shoots his flight" from the death-scene of her whose sigh the lost spirit carried to heaven as a propitiatory present; and lights on a widow aged forty-nine, whose menstrual function had ceased. The sequel does not inform us whether the widow had been listening to the doctor's effusion; but there can be no doubt that she lost ten ounces of blood, and took ten grains of calomel, fifteen of jalap, and two of antimonial powder, followed by a rattling dose of Epsom salts next morning.

The author gives us a very interesting history at page 113, of a young lady who was supposed to be labouring under an organic affection of the heart. However, on a critical examination it was proved to be but a functional disorder, the organ being affected through the means of love, acting on the ganglionic *department*. The author finds out that her affections were centered on a gentleman who was objectionable with

papa and mamma, on account of his poverty. The good professor, then—and God bless him for it—never rested till he overcame the parents' objections, and obtained consent, which completely restored the heroine. "I received," says our author, "great credit for the recovery, it being looked upon as something miraculous; and yet I am convinced that, without the *efficient aid of the lover*, death would have triumphed over all professional science and skill." He then adds: "The renewal of their engagement was soon followed by matrimony, and the next important and very natural event in their history was, the birth of a son." We would ask the author, would not the birth of a *daughter* have been just as natural an event; though perhaps not, as we believe there are more males than females born.

Notwithstanding the great quantity of room taken up with useless matter, this volume contains a due proportion—indeed we might say, an extraordinary proportion—of sound sense. The author is a well-informed, practical physician. Bearing as his motto "*sublatâ causâ, tollitur effectus*," he keeps it ever before him, and never loses an opportunity of inculcating it upon his class. There is not a derangement during infant life, during pregnancy, or after delivery; not one single disease connected with the female organs of generation, which is not noticed—and that right ably—in this excellent book. The various treatment adopted is sound as practical. None can read this volume without deriving advantage, and we confidently recommend it to the profession, especially the junior members of it. We forgive our author's peculiarities—in fact, we doubt if we were better acquainted with him, whether we should not like them—on account of his host of good qualities; and we sincerely trust he may be long spared to fulfil his noble and charitable mission, and to be an ornament to the University, the chair in which he so worthily occupies.

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*Bidrag til Kundskab om de Sindssyge i Norge.* Af LUDVIG DAHL, Reservelæge ved Gaustad Sindssygeasyl. Christiania. Det Steenske Bogtrykkeri. 1859. 8vo, pp. 305. With three lithographic illustrative Maps.

*A Contribution to our Knowledge respecting the Insane in Norway.* By LOUIS DAHL, Physician Extraordinary to the Gaustad Lunatic Asylum.

THE work before us is the result of observations made during official journeys undertaken by the author, with the sanction

and at the expense of the Government, and continued during a period of about seven months, with a view to ascertain the cause of the great preponderance of insanity in certain districts of Norway. The volume contains three principal divisions, the first treating of the details of the occurrence of insanity in Norway; the second of the etiology of mental affections in that country; and the third of the condition and treatment of the insane.

Much of the carefully collated information contained in the first division of the work is of almost purely local interest, consisting of comparative views of the frequency of insanity in the several districts of Norway. It may suffice for our present purpose to state, that by the Census of 1855, it was ascertained that the number of insane in the kingdom was then 5071 in a population of 1,490,047, or 1 in 293·8, exhibiting an increase since the preceding Census in the population of 12·16 per cent., and in the number of the insane of 18 per cent. The proportion of insane was greater in the country districts than in towns; in the three last decades the number of idiots was about three times greater in the former than in the latter. The author concludes the first division of his work by instituting a comparison between Norway and some other countries, and observes that, "although no other country, with which I am acquainted, exhibits such unfavourable circumstances as Norway, it will be seen that the difference is not so great as has been supposed."

Of the causes of insanity in Norway, the most important are hereditary predisposition, the intermarriage of near relations, and the use of spirituous drinks. That the preponderance of insanity in certain parts of the kingdom is due to causes included under the third head, will appear from the following comparison between the number of sober individuals and of insane in each of the five dioceses of Norway. It will be seen that the last district in the table alone furnishes an exception to the general rule, that the smaller the number of sober individuals in a district, the greater is the proportion of insane to the population.

	Sober Individuals in 100 of the Population.	Proportion of Insane.
Diocese of Christiansand, . . .	56·2 . .	1 in 246
„ Christiania, . . .	59·5 . .	1 „ 287
„ Trondhjem, . . .	63·4 . .	1 „ 296
„ Tromsö, . . .	70·5 . .	1 „ 361
„ Bergen, . . .	72·6 . .	1 „ 345



An examination of the smaller subdivisions of the kingdom yields results very similar to the above. The exceptions, of which, as is to be expected, there are some, are for the most part not important.

The author expresses his opinion that the abuse of brandy, especially by the fathers, but partly also by the mothers during pregnancy and suckling, has exercised a considerable, perhaps the most considerable influence in the production of the large number of idiots in the kingdom.

Dr. Dahl next proceeds to review the several causes of acquired insanity. These he enumerates as depressing mental emotion; states of bodily weakness, produced, for example, by famine, injudicious bleeding, parturition, suckling, self-pollution, religious influence, &c. Each of these causes is illustrated with a number of cases, giving a highly practical character to the work. The third section of the second part is devoted to the consideration of the several causes of idiocy.

The last part of the volume is, as we have already stated, occupied with the condition and treatment of the insane.

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*Original Contributions to the Practice of Conservative Surgery.*

Being a Selection of the Surgical Cases occurring in the Practice of JAMES G. BEANEY, M. R. C. S. E., formerly Surgeon to the 3rd Royal Lancashire Regiment in the Mediterranean, and Surgeon to Her Majesty's Hospitals in Garrison during the Crimean War; Member of the Medical, the Microscopical, and the Philosophical Societies of Victoria, &c., &c. Melbourne: George Robinson. 1859. 8vo, pp. 168.

THIS book is one that gives us a two-fold pleasure,—and this not for any great intrinsic merit of its own, for the writing is rather of the quality suited for the ephemeral article than for the more enduring octavo,—not that we would depreciate it,—for one source of gratification which we confess to having felt in its perusal arises from the conviction it forces upon our minds, that the writer is both well read and well taught. Not a page that does not bear evidence of his acquaintance with the sayings and doings of the best living authorities, or the writings of those who have passed away. But it is a maiden effort: and, had it appeared under other circumstances, we should have been content to dismiss it with a brief word of commendation and encouragement, seasoned, it may be, with a word of warning as to those faults of which its writer will be the first to

give a practical acknowledgment in his more mature productions.

In the dedication to Mr. Syme, and in the preface, it is stated that this is the first medical book produced in the Australian Colonies, and this is our other and principal ground for pleasure in seeing it on our table. To a book which appears under such circumstances we would not give a cold salutation, even if it came in a homely garb, and with an aspect of colonial poverty. But in the present case there is no need for an appeal *ad misericordiam*: not only is the refection set for our mental appetite, varied and light as suits the summer season, but the service is unexceptionable. Both printer and publisher have done their parts well, and all parties concerned have reason to be satisfied with what their labours have produced for our entertainment. The press-work, paper, and binding would do credit to the best houses in this or any other country, and we may, in all honesty, congratulate the Colony on having made such a successful debut in medical literature.

We cannot claim such an acquaintance with medical matters at the antipodes as to know whether Mr. Beaney's strictures are all fully deserved; but, if they be, he has thrown a shell among his brethren that will explode with some noise, and, if he gets a hard knock or two in the *melée*, he must bear them with due philosophy, remembering that such is the lot of all pioneers of improvement. The use of chloroform would seem to have made small way in Australia: not only its novelty and the manifest dangers that attend its administration would seem to blind colonists to its advantages, but, as we suppose, there will be some difficulty in obtaining it pure, and much hesitation, among those who have not seen it used, in handling it for operative purposes. Such causes for a long time operated extensively, and still do so to a minor degree, in the remote provincial districts of the old country, and it is only to be expected that, with greater difficulties of intercommunication, our Colonies would remain much longer dull to the blessings of the greatest discovery of the age. Similar remarks apply to the entire class of operations known by the name of conservative surgery, most of which have derived their very being from the possibility of *anæsthesia*. Mr. Beaney's book will be of great service in removing prejudices and enlightening ignorance, such as we allude to, and, if he occasionally hits somewhat hardly, to borrow a metaphor from the ring, we must set it down to his more recent and more vigorous training. There is no doubt that, in a rapidly rising colony, old-fashioned surgery will rapidly go to the wall when at-

tacked by one who is well up to the improvements of the last decade, and on this point we venture only to suggest to Mr. Beaney that, while men will look to the young for improvements in the *modus operandi*, it is to the experience of age that they will equally trust for the *methodus medendi*; therefore, while he attacks the errors of his colonial confreres, let him steer clear of personalities; he will find it a difficult task, perhaps, but a needful one, for few, if any, young men possess the qualities to compel the recognition of the public if they do not bear the stamp of professional approval. Few, if any, can stand at first, unless aided by the wisdom and by the good will of their elders in the profession, and the most able young man who can operate with promptness and judgment will often badly need the advice which experience can alone supply in the after-treatment of his cases.

We do not propose giving any analysis of Mr. Beaney's work. It consists of several short chapters on such subjects as excision of the hip-joint, removal of the maxillary bones, and traumatic stricture of the urethra, illustrated or rather founded on cases. Some of the subjects treated of, such as obstructive dysmenorrhœa, scarcely come under the title of *conservative surgery*. They are, however, more or less connected with the *reforms* of the healing art during the last ten or fifteen years, and most of them have such a necessary connexion with anæsthesia that the excellent chapter on that subject forms a most appropriate conclusion to the volume.

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*The Thermo-Electrical or Natural System of Medicine.—The Science of Life, Health, and Disease: explanatory of the Mysteries of Man's Existence, and all the phenomena of Life; with the Nature, Causes, and Treatment of Disease. The fruit of forty years' professional experience.* By CHARLES SEARLE, M. D., M. R. C. S. E. Illustrated with Plates. London: L. Booth. 1860. 8vo, pp. 284.

WE do not profess ourselves to be amongst the number of those who object to popularizing scientific or professional subjects, or who believe that the education of the masses on such topics as hitherto have been confined to the initiated is likely to degrade the status of the more strictly professional man, by familiarizing the mind of the public with what has but too frequently, and perhaps for too long a period, been considered as more sacred than the Eleusinian Mysteries. Entertaining such

ideas, then, we can safely assert that we approached the perusal of this work in no unfriendly spirit. Coombe's able work on the "Management of Infancy," Churchill's "Advice to Midwives," Smee's "Emergencies and Accidents," Thompson's "Dictionary of Domestic Medicine," even dear old Buchan's "Domestic Medicine," passed in hurried review in our mind's eye; and we could not, whilst admitting the claims of such popular authors, of *malice prepense* refuse admission into their ranks of one other collaborateur.

On opening the work, what particularly struck us was the fact that it aspires to two classes of readers—the general public, and the members of the medical profession; to enlighten the former on domestic medicine, and, at the same time, to give them an insight into the more recondite mysteries of anatomy, physiology, therapeutics, &c.; whilst for the latter he serves up a so-called new system of medical philosophy—an *olla podrida* compound of the Brunonian, the new Italian, and the electrical schools, flavoured with a not very clear or lucidly expressed idea of Liebig's theory of the metamorphosis of tissue. We confess, however, that it is with considerable apprehension we venture on a critical examination of either department of his work. We have read the preface, and dread his wrath. We submit an extract, which will acquit us, we are convinced, in our readers' minds, of the charge of poltroonery, to which this candid admission would otherwise justly expose us:—

"The views propounded are in principle—true, I believe in all sincerity—in reality I know them to be so;—but too simple—too true—too readily to be understood, I fear, to meet with the countenance and support of those whose interests are opposed to simplicity, order, and easy comprehension. In principles, I repeat, I am right—perfectly so, though in some particulars I may not be so correct:—on these I take my stand, and challenge inquiry,—the truth, and the truth *only*, is what I seek, and desire to see promulgated, from whatever quarter it may be derived. But let not those—whose interests are opposed to the dissemination of knowledge on these subjects among the people—attempt to silence me—as the propounder of new doctrines—by the common subterfuge of little minds—by inuendo, and the exposure of trivial defects,—from which no work is altogether exempt; in despite of such defects, which I am too conscious the work contains, I know it to be a right valuable one—enunciating principles worthy the attention of the public, and the best consideration of the profession; and if true—which the fullest conviction of my understanding assures me they are—the whole phenomena of life are now unmasked, and the treatment of every disease brought within the confines of a few general prin-



ciples—definite in kind, simple in nature, and readily to be understood;—and which, therefore, it is right and proper should generally be made known.”

Hard words these, my masters! Either we must swallow all the crudities, theoretical and practical, that Dr. Searle chooses to thrust down our throat, or be accused of sacrificing science to self-interest, and of endeavouring to upset truth by subterfuge and inuendo.

As we have said, the work is addressed to two classes of readers—professional and general. As our remarks, however, are intended for the former, we shall direct our attention to bringing under their notice a few examples of the scientific character of the theories here inculcated, merely contenting ourselves with the observation, so far as the latter are concerned, that almost any other work on the subject will be found more valuable for the purpose of enabling them to meet an emergency in the absence of a medical man—the sole object with which any of them should ever be consulted. One of the avowed objects of the work is to uproot the fallacies of mesmerism, homœopathy, hydropathy, and other empirical forms of treating disease, and yet not one line do we find devoted to an exposure of these fallacies—in fact, the only one of these that is at all noticed is hydropathy, and that in terms of praise. So far, then, as this portion of his labour is concerned, we may fairly state that the book has failed of its mission.

One of the few original theories, if not the only one, started by Dr. Searle is an attempt to explain the anæsthetic action of chloroform. Here we shall allow himself to speak:—

“Hence the regulated inhalation of chloroform, that is to say, of chloroform with a sufficient admixture of atmospheric air (the chloroform, I presume, having, from its highly inflammable nature, a greater affinity for oxygen than the hydro-carbonaceous elements of the blood have); this, then, on being received into the blood from the lungs now on its return to the heart, seizes upon and combines with the oxygen, thus deoxidizing the blood in the lungs, and depriving the general current of its chemico-vitalizing properties. Its effects are accordingly to lower the tone of the heart, to which it is now applied, and next, that of the brain, to which, in common with the rest of the organs, it is then circulated. The immediate deprivation of power thus induced, from defect of electro-nervous excitement, produces results precisely analogous in character to that occasioned by sudden loss of blood—the loss of sensation and volition, the first in the series of functions to be deprived of power in man’s progress towards death, which would follow by asphyxia, were the inhalation of the chloroform more perfect.”

“The highly inflammable nature” of chloroform! The postulate in this theory is of so startling a character that, however it may suit Mr. Public, we fear that it will not go down with the profession, whose *self-interest!* alone will call on them to question it. We are glad, however, a few pages further on, to find it established, on the part of so competent a chemist, that the free acid of the stomach is hydrochloric acid. This long-mooted point is now decided in favour of this acid, lactic acid never being allowed, even for one minute, to appear in court. It is true that he has not favoured us with the nature of the experiments by which he has solved this *questio vexata*; but we may well be contented to receive it on the *ipse dixit* of the chemist who discovered a property of chloroform that had hitherto escaped the attention of the host of chemists engaged in its investigation.

His practical views are of the true Sangrado school—bleeding and purging. His arguments in favour of the first of these are highly original, and afforded us one of the heartiest fits of laughter that we have enjoyed for some time. We shall not be so selfish as to deprive our readers of a similar indulgence:—

“No other arguments than those adduced, are required to satisfy my mind of the utility of the practice of blood-letting, on the ground at least of its being far other than an unnatural remedy: and for what other purpose, I would ask, were leeches, which are to be found in every country, created—but in the bounty and beneficence of Providence for man’s use?”

And, to continue this style of argument, we suppose that tigers and lions were created to eat us up, and fleas (more universally present than leeches) to —. But it is too ridiculous; argument would be wasted in attempting to refute such a method of reasoning.

Running throughout the practical part of the book we find a favourite prescription of his, honourable mention of which is repeatedly made—a pill, composed of calomel, aloes, and Castile soap, one grain of each. The aloes is introduced into this mass, according to Dr. Searle, to *expedite* the purgative action of the calomel—a physiological property of aloes of which future writers on materia medica should take note, as hitherto it has been overlooked in every work on the subject with which we are acquainted; and we have also to express to him our sense of gratitude for putting us up to the fact that the popular synonym for the plant furnishing us with *nux vomica* is “the crowfoot.” We had been for some time aware that the

seeds, from their fancied resemblance to gray eyes, and from being poisonous to crows, had been termed by our German neighbours *Krähenaugen*, or *crow's-eyes*; but, up to the moment at which we write, we laboured under the impression that the *crowfoot* was an herb of the ranunculaceous family; but, as we live, we grow older, and it is our own fault, and not Dr. Searle's, if we do not also grow wiser.

After a careful perusal of Dr. Searle's present work, we can record no other opinion of the portion devoted to the establishment of a new theory of medicine than that the one which he suggests is, as we have already termed it, an *olla podrida* of various theories long since enunciated by other authorities, and these not even expressed by him accurately, or in the clearest language. This might be pardoned; but what language can be severe enough to use towards one who, in a work addressed to the general public, speaks thus of a learned profession, of which he is himself a member:—

“Unsatisfactory, in a high degree, it assuredly is; for what can be said of a system or structure of any kind without a foundation? of principles of treatment derived from theories of disease based upon assumption only,—the ingenious sophistries of individuals, as Boerhaave, Cullen, Brown, Broussais, the accepted oracles of their day, whose dogmas have been embraced as articles of faith, and constitute the basis of all that is orthodox? Nevertheless, such is the condition of the science of medicine at the present time. It merits not, therefore, the name of a science. A science, to be really such, should have an imperishable foundation—its principles should be founded on the laws of nature, which are immutable in character, and simple when understood.”

This, in the hearing of men who are still deploring the loss of such physicians as Graves, Bright, and Addison—in an age rendered remarkable by some of the greatest, the brightest contributions to the philosophy of our noble profession!

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*Therapeutics and Materia Medica: a Systematic Treatise on the Action and Uses of Medicinal Agents, including their Description and History.* By ALFRED STILLÉ, M. D. 2 vols., 8vo. Vol. I., pp. 813. Vol. II., pp. 975. Philadelphia: Blanchard and Lea. 1860.

In our last Number we had to welcome a work on Practical Pharmacy, the produce of an American pen. In this we have to consider, emanating from the same country, a voluminous

treatise on Therapeutics and Materia Medica. The very nature of the subject forbids our expecting from the author any very great amount of novelty—the labours of his predecessors necessarily having left for him but little beyond a work of compilation. How this duty has been discharged, it remains for us to inquire, and to enable our readers to express a just opinion on the subject, we shall now proceed to indicate the course adopted by Dr. Stillé in the production of his present Treatise, and the materials of which he has availed himself for the instruction of those who consult his pages.

The work, as we shall presently see, being especially therapeutical in its nature, to the great exclusion of materia medica and pharmacy, the author has properly adopted a classification founded on therapeutical properties in preference to any other. The following is the arrangement that he has pursued:—

#### CLASSIFICATION.

I. Medicines which allay local irritation.	LENITIVES.
II. Medicines which repress local action.	ASTRINGENTS.
III. Medicines that irritate the part to which they are applied.	IRRITANTS.
IV. Medicines which promote nutrition.	TONICS.
V. Medicines which stimulate the whole economy.	GENERAL STIMULANTS.
VI. Medicines which stimulate the cerebro-spinal system.	CEREBRO-SPINAL { Narcotics. STIMULANTS. { Antispasmodics.
VII. Medicines which especially stimulate the spinal nervous system.	SPINANTS ( <i>Tetanica</i> ).
VIII. Agents which depress the whole economy.	GENERAL SEDATIVES.
IX. Medicines which depress the vascular system.	ARTERIAL SEDATIVES.
X. Medicines which depress the nervous system.	NERVOUS SEDATIVES.
XI. Medicines which produce a discharge from particular organs.	EVACUANTS.
XII. Medicines which modify the nutrition of the body, without producing any antecedent phenomena.	ALTERATIVES.

{ Epispastics.  
Errhines.  
Sialagogues.  
Emetics.  
Cathartics.  
Expectorants.  
Diaphoretics.  
Diuretics.  
Emmenagogues.  
Anthelmintics.

Previous, however, to entering on the consideration of the



various agents that constitute these several groups, Dr. Stillé has given us a chapter generally introductory to the entire subject of therapeutics. We propose entering somewhat into detail as to the manner in which our author has here acquitted himself; but, previous to so doing, we must submit for our readers' consideration one passage that has our full concurrence, and that will strongly impress on the minds of such as peruse it the vast difficulties attending the prosecution of this department of medical science:—

“But it is not a careless or a random experience which is competent to solve the dark and intricate problems of therapeutics. A clear understanding of the terms of any problem is the first and an essential step towards its solution. In the present case there is, upon the one side, man, but not a perfect animal organism. He has come into the world imperfect, with the deformities, the defects, the morbid tendencies of his ancestors; he has grown up under the most varied circumstances of climate, locality, &c., all of which have moulded his physical condition, and developed in him peculiar susceptibilities; he may be the subject of almost innumerable diseases, of various grades, in various combinations, and at different stages, and each one modified by his preëxistent tendencies. On the other side there is the medicine, varying in its effects with its origin and mode of preparation, its dose and combination, even in the same healthy organism, but infinitely more so according to the peculiarities of the patient and the disease with which he may be affected. It would seem almost impossible that the product of two such uncertain quantities should ever be foreseen, or, in other words, that therapeutics should ever attain to the certainty even of a rational art, or, still more, of a science. Although it is not a science, yet it involves a large number of scientific elements; for, as will appear in the sequel, in many therapeutic problems there are chemical or physical conditions which can be accurately determined, and it is probable that with the progress of investigation the number of these will hereafter be greatly increased. Nevertheless, the modifying influences of the causes already noticed and of many others are so powerful and controlling, that in practice it is seldom possible to foresee the precise result even when the mode of action of the remedy is approximatively known. As was before remarked, those remedies are most efficient whose action upon the economy is most obscure.”

Dr. Stillé proceeds then to consider the various ways in which medicines may act, entering on the subject very fully, but not at all in the exhaustive manner that we might have expected from the size and special character of his work. For instance, his allusion to the celebrated experiment of Messrs. Morgan and Addison is as follows:—

“Some writers who maintain the exclusive operation of sympathy in the mutual relations of remote parts cite with satisfaction the experiment of Morgan and Addison, in which a carotid artery of one dog having been made to interchange its current with the corresponding artery of another dog, one of the animals was poisoned by inoculating it with a concentrated solution of strychnia. It died in seven minutes with characteristic tetanic symptoms, while the other dog manifested none of the effects of the poison. But it is to be observed that a very small portion, comparatively, of the blood of the poisoned animal could have found its way into the sound one, because the circulation in the former began immediately to languish under the influence of the poison; and, moreover, that it was arterial and not venous blood which was transfused, and therefore not as highly charged as this latter with the poison.”

This, in our opinion, is a very summary way of disposing of a most important experiment bearing directly on the subject under discussion, and is neither doing the gentlemen in question or his reader fair justice. No one from reading these few lines could ever imagine that the principal object of Messrs. Morgan and Addison's experiment was to upset what they conceived to be a mistake of the illustrious Magendie. They seem to have laboured under the impression that this distinguished physiologist wanted to support the theory that the poison acted by direct contact with the brain, whereas Magendie taught that the entire of the strychnos family acted through the spinal marrow, implicating the brain, but indirectly. The experiment was instituted thus with this object, and is open to far more serious critical objections than those brought forward by Dr. Stillé: granting that a portion of the strychnia did get into the circulation of the second dog, it must have been infinitesimal compared with that which was circulating in the blood of the first dog; first, mechanical difficulties, such as want of perviousness of the tube, would act as a drawback to the experiment; next, as Dr. Stillé properly remarks, the toxic action of the strychnia in the first dog would, of course, retard the passage of the blood from his system into that of the second dog. Again, it must not be forgotten that the supply of blood to the brain is conveyed through four vessels, of which but one was put under contribution in this experiment, so that the second dog, presuming he got the entire supply of blood traversing the carotid artery of the first dog, only got *one-fourth* of the quantity of poisoned blood that in the first dog was supplied to his brain alone, and, by the nature of the experiment, this amount of poisoned blood was directed to the special supply of that organ which Magendie

contended for, was *but indirectly implicated by the natural family from which the poison was selected*; and, finally, as asserted by Blake, the greater probability was, as the poison began to act on dog No. 1, so far from its being conveyed into the system of dog No. 2, that an influx of pure blood from the latter would take place into the former, thus giving rise to a very serious source of fallacy in the experiment.

Dr. Stillé's remarks on the fact of the action of medicines being produced by absorption, are open to a similar charge of not having exhausted the subject. Magendie's first experiment on the subject is introduced, but the far more conclusive one is omitted. In the first experiment alluded to by Dr. Stillé, Magendie divided all the soft parts, except the vein and artery, of one of the hind legs of a dog whilst under the influence of opium; to a wound in the foot he then applied a portion of upas tientié, and in four minutes the dog expired. Many objections were alleged against this experiment: the opium, used for humane purposes, was said to have vitiated the entire value of it. Lymphatic vessels are found on the coats of the vessels, and through their agency the poison might have gotten into the system. To obviate these and similar cavils, Magendie repeated the experiment, with the additional precaution of dividing the vessels also, and reconnecting them by cylinders of quills, in which condition, equally as in the former, a fatal result ensued, clearly establishing the fact of the action of the upas tientié at all events being due to absorption. This last, by far the most convincing experiment of the two, is not alluded to by Dr. Stillé.

In his therapeutics also we feel that we have a right to complain of Dr. Stillé; in his remarks on the influence produced by age on the doses of medicines we read:—

“At the two extremities of life; the function of absorption displays opposite degrees of activity; it is excessive in infancy, and deficient in old age. On this account, chiefly, the average doses of medicines for adults must be greatly diminished for children, and somewhat increased for the aged.”

Now this is an erroneous assertion, by no means confined to Dr. Stillé's work alone, and still, a more dangerous impression could scarcely be made on gentlemen about to enter on the practice of our profession:—“The average dose for adults must be somewhat increased for the aged”! We should like to be informed whether this holds true of opium, of stimulants generally, of cathartics, &c., &c.

Again, we find the following statement with reference to

the method of treating malignant cholera by means of saline injections into the veins:—

“In cholera, the blood becomes thick from the loss of serum, and saline solutions injected into the veins have, in some instances, restored its infuidity, but rarely, if ever, been the means of saving life.”

Now, when we reflect that this method is never employed but in extreme cases, and when we consider the result of the statistics furnished to us by Dr. Griffin, viz., of 282 cases, the record of which he could find so treated, 221 died, and 61 recovered, we must say that we think Dr. Stillé has stated the case a little too strongly against the value of this plan of treatment. For there can be but little doubt of the probable result that would have ensued in these 61 cases, all at the time in the very extreme condition of collapse, had they not been so treated.

On the whole, we must say that Dr. Stillé has not done as full justice to this section of his work as we are entitled to expect in a Treatise so entirely devoted to therapeutics as his professes to be. So far as it is entitled to be considered a work on *materia medica*, its claims are but slight indeed. In describing both the organic and inorganic articles in the *materia medica*, he contents himself with but the most meagre account of them; sketching, rather than accurately describing the various pharmaceutical processes; rarely, if ever, attempting to explain them. The principal, if, indeed, not the only merit inherent in his work, is the very full manner in which he enters into the therapeutical history of the several articles of the *materia medica*. This, in itself, is quite sufficient to recommend it to our favourable consideration, and we are tempted to submit to our readers, as a sample of his style, and the manner in which he handles his subject, rather a long extract, in which he discusses *one* of the therapeutical uses of belladonna. To introduce the entire article, from its length, would be simply impossible.

“*As a Prophylactic against Scarlatina.*—When Hahnemann, about the year 1800, was engaged in observing the effects of medicinal agents, he noticed that belladonna produced a papular cutaneous eruption and dryness of the throat. These symptoms he imagined to be a sort of artificial scarlatina, and, at once pressing the fact into service of his new theory, decided that belladonna was the natural specific for curing, as well as preventing, scarlet fever. Thus early, too, he betrayed his unfitness for a liberal profession by vending the medicine as a secret remedy. This alleged power of



belladonna has done more, perhaps, than anything else to sustain the impudent heresy of homœopathy, and for that reason practitioners have refrained from testing its truth. To do so is, however, both impolitic and unjust; for the allegation is not in itself repugnant to belief, and, if really true, is too important to be slighted.

“In estimating the power of any agent to prevent a given event, it is necessary first to know the probabilities of that event taking place independently of all interference. We know that nearly all unprotected persons exposed to small-pox will contract the disease; hence the protective power of vaccination may be inferred with an approach to accuracy. In the case of scarlatina, on the other hand, the degree of contagiousness is not ascertained, for we constantly see families in which one or two persons only, out of perhaps eight or ten, are attacked. In any given instance, therefore, if belladonna were administered to all the members of a family of which one already had the disease, it would be impossible to say, if the disease did not extend, whether its arrest were owing to the exhibition of the medicine or not. But, it is no less certain, if this substance were given to many families, or portions of families, during an epidemic of scarlatina, and, as a general rule, those who had taken it escaped the contagion, while a large proportion of those who had not taken it were attacked, it is certain, we say, that the protective power of belladonna against scarlatina would be unequivocally proven, although the exact degree of that power might not be determined. And such, in reality, we believe to be a fair induction of all the facts which have been recorded concerning this question.

“Up to 1830 nearly all the published evidence had been collected by Bayle, who states the following results:—Leaving out of the account those authors who have omitted to mention the number of their patients, it appears that, in the midst of scarlatinous epidemics of greater or less severity, 2,027 children and adults made use of the belladonna, of whom 1,948 escaped the disease, and 79 contracted it. These experiments were, in general, performed by competent persons, and the accuracy of their results cannot fairly be questioned. It may, however, be objected that the results are, after all, of a negative value, although derived from an extensive observation, and that Lehmann and one or two others, after trying belladonna faithfully in epidemics of scarlet fever, concluded unfavourably to its protective power. The paucity of the cases of some objectors, and the meagreness of the details furnished by others, deprived their opposition of real weight; and, moreover, the circumstances under which some of the experiments above alluded to were performed render it obligatory to accept their results as true, or to believe, what is more improbable, their untruth. Thus, Dusterberg, at the commencement of an epidemic of scarlatina at Warburg, in 1820, administered belladonna to all the children under his care, but, for the purpose of determining how far the influence of the medicine was real, he withheld it from one child in each family. Every one of the latter was attacked, while but few of the former,

and who had taken the belladonna during four or five days only, experienced the disease. This instance appears to be conclusive, for its authenticity does not appear to be denied.

“Of later experiments upon the subject under consideration, there are two whose observations were made upon an extensive scale. In the winter of 1840–41, M. Stievenart tested the question in several of the villages around Valenciennes, where scarlatina had already broken out. In one of the villages two hundred out of two hundred and fifty persons took the belladonna, and escaped the fever, while fourteen of the remaining fifty were attacked, and four died. In another village, the medicine was administered to nearly all the pupils of the public school; these, without exception, escaped, while several who would not take the belladonna were attacked.

“During an epidemic of scarlatina in Buncombe County, South Carolina, Drs. Erwin and Hardy kept an account of two hundred and fifty children who were placed under the influence of belladonna, and of that number less than half a dozen had the disease, and they but mildly. Those families which did not take the preparation were, with scarcely an exception affected.

“An epidemic of scarlatina occurred at the Charleston (S. C.) Orphan House, in 1838. There were 114 inmates of the asylum, and the arrest of the epidemic among them is ascribed to the persevering administration of belladonna. Dr. J. C. Morris administered the medicine to one-half of the children at the Preston Retreat, Philadelphia, and found that 53 per cent. of these were attacked, while 73 per cent. of the remaining half had the disease.

“On the other hand, when experiments like the above were tried at Heriot’s Hospital, Edinburgh, by Dr. Andrew Wood, and at the Orphans’ Asylum, Boston, by Dr. Alley, it was found, to use the words of the latter, that ‘there was no manifest difference between the two classes as to susceptibility to the contagion.’

“If, now, we turn to authorities who have not published the details of their experiments so much as the conclusions which they drew from them, and from the collective materials pointed in a preceding paragraph, we shall still find the prophylactic virtues of belladonna affirmed by the most eminent physicians, particularly by Hufeland in Germany, and Guersant in France; the latter of whom states that he never failed to employ the method we are discussing, and that he had remarked the almost certain immunity of those who were subjected to it. The dissentients from this view include, it is true, several eminent persons, but, with the exceptions already stated, they do not, in general, appear to have formed an opinion deduced from any enlarged personal experience, but rather to have based their objections on the results of inadequate trials, or upon a very natural distrust of the original source of the statement that belladonna is a prophylactic against scarlatina. Thus Joseph Frank, in the work above quoted, expressly declares that he had not experimented with belladonna, because the use of Hahnemann’s

ridiculous infinitesimal doses is repugnant to common sense, and because he was conscientiously opposed to making a doubtful experiment upon healthy children with a medicinal dose of one of the most active poisons. It is enough, in refutation of such arguments, to say the numerous successful trials which have been referred to, were made, not with the phantom doses of homœopathy, but with such as, although minute, were sufficient, in a great many instances, to produce an eruption on the skin and dryness of the throat, and yet without, in a solitary case, giving rise to unpleasant symptoms.

"On a review of the whole subject, we feel bound to express the conviction that the virtues of belladonna as a protective against scarlatina are so far proven, that it becomes the duty of practitioners to invoke their aid whenever the disease breaks out in a locality where there are persons liable to the contagion, particularly in boarding schools, orphans' asylums, and similar institutions, and among the families of the poor; whenever, in a word, it is difficult to place the healthy at a distance from the sick. The dose which it is proper to prescribe under such circumstances may be thus stated. Dissolve from one to three grains of fresh and well prepared extract of belladonna in an ounce of cinnamon water, adding a few drops of alcohol to prevent fermentation. Of this solution may be given, two or three times a day, one drop for each year of the child's age, to be so administered for two weeks, or longer, if the danger should continue. It is not pretended that the protection, such as it is, is permanent. On each recurrence of an epidemic the same process must be repeated."

This extract, as involving a question still undecided in the minds of many able and thoughtful physicians, must prove of interest to our readers. We rather incline to agree with Dr. Stillé, that the merits of the case still require investigation, more, perhaps, out of respect and deference to the position of those who advocate its value than from any certainty on our own part of its utility. Such of our readers as would wish still further to investigate the question will find an admirable paper on the subject in the pages of the "*British and Foreign Medico-Chirurgical Review*" by Dr. Warburton Begbie. We cannot agree with him, however, in his approbation of the sentiments expressed by the late learned and lamented Dr. Pereira. "I conceive twenty cases of failure are more conclusive against the opinion than one thousand of non-occurrence." For, in this case, presuming its efficacy to be demonstrated, why should occasional failures be urged against it more than against vaccination? Within the last few months we were in attendance on a young man, in a rather severe attack of small-pox, who had been carefully vaccinated, and who had an attack of well-marked small-pox some years previously and subsequent

to the vaccination. In this case, neither vaccination, nor the very disease itself, had afforded him immunity, and still no one questions its undoubted efficacy.

We admit the rigour with which such experiments should be conducted; we confess ourselves to be perhaps amongst the sceptics; yet we agree with Dr. Stillé's conclusion. In common with many other practitioners, we have had our own limited experience on the subject; and were we not well aware of the capriciousness displayed in its invasion by the disease in question, we might have been inclined to admit its claims on the *post hoc propter hoc* method of reasoning. As to the eruption alluded to by Hahnemann, as the homœopathic reason for its employment, this is precisely what makes us doubt its efficacy; for, not to enter on the general question universally affecting all homœopathic doctrines—that *similar symptoms do not constitute similar diseases*—we for ourselves must assert that the eruption is anything but a general result of the administration of belladonna. We have repeatedly administered it, and in full doses, in cases of nocturnal incontinence of urine, and do not remember in a single instance the occurrence of this eruption, though in all cases carefully looked for.

Amongst the most interesting portions of Dr. Stillé's work are his historic recollections of the medicines that we now employ. In general these are most accurate; but his recollections of the Eau Medicinale d'Husson are not in accordance with ours. He evidently either has not seen or does not credit the account given by Mr. Bushell, in his interesting paper read before the Pharmaceutical Society, March 10th, 1852. As this involves a question of historic interest, we shall not hesitate to reproduce a portion of that communication here.

“The earliest medical notice I can find of the Eau Medicinale is by Dr. Jones, in the year 1810, who had been on the continent in the years 1802 and 1803, with a gentleman who was a great sufferer from gout, and had then heard of the remedy of Husson, and which, on his return home in the year 1805, he was induced to make use of. He derived so much benefit from it, that from this time it made great advances as a remedy in England, and, to quote the words of the editor of the ‘Edinburgh Medical and Surgical Journal,’ ‘noblemen and philosophers concurred in sounding its praises, if not in dancing hornpipes, in testimony of the new agility and flexibility of toe with which it had endowed them; and the President of the Royal Society, Sir Joseph Banks, who experienced the most



extraordinary deliverance from his arch enemy, is said to have made it almost his pocket companion.' It now became a great desideratum to ascertain its composition. Rhododendron, Chrysanthemum, Digitalis purpurea and lutea, Tobacco, Elaterium with opium, and many other plants, supposed to be analogous in their action to the magic water, were stated to form its basis.

"Dr. Pereira states in his '*Materia Medica*':—

"The circumstances which have led to the extensive employment of colchicum in gout are the following:—About seventy years ago, M. Husson, a military officer in the service of the King of France, discovered, as he informs us, a plant possessed of extraordinary virtues in the cure of various diseases. From this plant he prepared a remedy called Eau Medicinale, which acquired great celebrity for abating the pain, and cutting short the paroxysm of gout. Various attempts were made to discover the nature of its active principle. In 1782, Messrs. Cadet and Parmentier declared that it contained no metallic or mineral substance, and that it was a vinous infusion of some bitter plant or plants. Alyon asserted that it was prepared with gratiola; Mr. Moore that it was a vinous infusion of white hellebore with laudanum; Mr. Want that it was a vinous infusion of colchicum. Although most writers have adopted Mr. Want's opinion, we should bear in mind that the proofs hitherto offered of its correctness, viz., analogy of effect, cannot be admitted to be conclusive, as is well shown by the fact that they have been advanced in favour of the identity of other medicines with the Eau Medicinale.

"I should apologize for making so long an extract from Dr. Pereira's work, but as it contains a perfect epitome of all that I have ever seen on the subject of the so-called gout specific, and as it leaves the question of the identity of its basis open to further inquiry, I hope that the circumstantial evidence which I now propose to lay before the Society may somewhat clear up the point.

"Mr. Want published his opinion in the '*Medical and Physical Journal*,' vol. xxxii., in 1814; and it was two or three years after that time, at the commencement of my apprenticeship, I was directed to prepare a preparation of colchicum in rum (four ounces of the dried cormus to a pint). I was residing close to Covent Garden Market, and frequently had conversations on plants, &c., with the late Mr. Grimley, the herbalist, to whom I applied for the colchicum. Mr. Grimley inquired of me if I knew how it was that the use of this remedy was discovered by Mr. Want? He then related the

following circumstance:—Mr. Want had returned home from visiting patients, and met his wife on the stairs, and told her that her father had been seized with a violent attack of gout. The nursemaid, who was standing by, stated that she once lived with a little French gentleman, who prepared a secret remedy for the cure of gout, the Eau Medicinale; that he was accustomed to carry on his operations at the upper part of the house; and that there was a door on the staircase which he always kept locked, but that she had managed to obtain a little bit of one of the articles he made use of, and that she then had it by her locked up in her box. Mr. W. had not much difficulty in gaining a sight of this treasure. It was unknown to him, but he at once proceeded to Covent Garden Market, and applied to my informant, Mr. Grimley, to ascertain if he could recognise the portion of bulb. Mr. G. pronounced it to be the colchicum; and, to Mr. Want's further inquiry, informed him, that the only person who ever applied to them for it was a little Frenchman, and that he was accustomed to order from a cwt. to a cwt. and a half more than once in the season; that he adopted great precaution to prevent their obtaining a knowledge of what he did with it, and from whence he came; that he always made inquiry if they had it ready, paid the amount charged, then brought a porter, who carried it to a hackney-coach which he had in waiting, and which immediately drove off with its precious charge—for precious it was, only to be compared to a lump of the Californian or Australian mineral, as its preparation sold for its weight in gold (two drachms, twenty-two shillings). This relation, although occurring about three or four and thirty years ago, is quite fresh in my memory. I have related it to many, and about seven years ago I was in attendance on the late Earl Thanet, who suffered much from gout, and had a great objection to take colchicum. I happened to mention this little history, when he said, 'You are quite right.' I met that little Frenchman repeatedly years ago at the late Duke of Queensberry's, who was a martyr to gout, and to whom he used to administer the Eau Medicinale, he being the preparer of it. In the course of inquiry I have also found good reason to suppose that this little Frenchman was a well-known foreign perfumer, and has been dead upwards of twenty years, the founder of the house who now profess to be the proprietors of this once celebrated remedy.

"I have stated that it was in the thirty-second volume of the 'Medical and Physical Journal,' that Mr. Want first made public his discovery of the basis of the Eau Medicinale D'Husson, but I find on further reference that it was not in a medical,

but in a popular journal, the 'Monthly,' that he had previously announced it. I should take up too much of the time of the Society, if I entered into the controversies which took place at this period, with respect to the reliance which could be placed upon this beyond the numerous other drugs which had been as confidently declared to form its active ingredient, and it was the opinion of many that ere long it would be consigned to the tomb of the Capulets. I find, also, that a charge was made against Mr. Want, by an anonymous correspondent, that he had gained a knowledge of its basis by means somewhat similar to what I have now related, but which he denied, stating that he had obtained the first hint from Alexander, of Tralles, who recommended a remedy, 'Hermodactylon,' for the cure of gout, and with the effects of which the *Colchicum autumnale* entirely corresponded; and that this plant had entered into many gout remedies that had become obsolete. All I am now desirous to say on this subject, is, that the blue chamber being once penetrated, its mysteries might be readily compared with those which had preceded, but I believe the key was obtained in the manner I have related to the Society."

Having freely expressed our opinion of what we consider blemishes in Dr. Stillé's work, we would be far, indeed, from wishing to be understood as expressing unqualified disapprobation of it. Our opinion is, that it is a compilation, but, in many respects, a most admirable one, and one that, so far as its therapeutical department goes, will well repay a careful study.

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*The Causes and Treatment of Imperfect Digestion.* By ARTHUR LEARED, M.B., M.R.I.A. London: John Churchill, New Burlington-street. 1860.

A MASTER-MIND says that "Science in its most comprehensive sense means knowledge, and in its ordinary sense means knowledge reduced to system; that is, arranged in a regular order, so as to be conveniently taught, easily remembered, and readily applied." If this definition be kept in view, when we hear the profession of medicine taunted with uncertainty and want of scientific basis, we need but point for a triumphant reply to the many able and laborious observers in its ranks, who pursue their course for many years, steadily and silently accumulating knowledge in the form of facts, until a sufficient number may have been noted to render them valuable, when they give the benefit to their brethren by publication. Amongst such men

may rank the author of these present notes of the causes and treatment of imperfect digestion. The book, small in size and unpretending in style, contains a considerable amount of information in a condensed form, and, without entering with tedious minuteness into details, brings our knowledge in every department of an extensive subject down to the present time.

Dr. Leared generally employs plain language, and has a happy facility of expression, which conveys his meaning in a style lucid, and free from too many technicalities. Chapter I. contains a short view of the physiology of digestion, in which the several parts performed by the different organs concerned are simply stated, their importance contrasted, and some of the experiments, by which the exact nature of their individual functions have been ascertained, are set forth and commented upon. An effort, too, is made by the author to rescue one of the most important amongst them, the liver, from the obloquy so constantly cast upon it. "No organ," he says, "is so much maligned; pains and various ill effects are daily attributed to it, or to bile, as its responsible agent, of which both are guiltless."

In the second chapter, which treats especially of the causes of indigestion, all the more familiar are enumerated, whilst some, which are very much unsuspected by the generality of people, are elucidated and dwelt upon. Dr. Leared considers that perhaps there is too much of sameness in the diet of persons associated together, and that there might with advantage be a greater individuality in matters of eating and drinking. He also deprecates frequent changes of hours for meals, as likely to produce dyspepsia, and points out strongly the dangers of habits of repletion and partaking of food largely after exhaustion from long fasting. He adds, too,

"That, when the general health is deteriorated from any cause, digestion is infallibly impaired; in many instances it is sought to prop up the one by overtaxing the powers of the other, and dyspepsia is often thus permanently added to the old disorder."

Of considerable importance, also, is the proper distribution of meals during the day. Their approximation is pernicious, for the stomach should have a season of rest, to complete its action upon the food previously taken; and injury is often done to invalids by the anxiety of friends to force nourishment upon them. It would be well also if medical men were to impress upon those whose destiny may lead them to reside in foreign lands, the advantage that would accrue to them and the dangers which they would escape by more or less adapting



their dietaries to the usages of the inhabitants of such climate as they may find themselves placed in.

The third chapter contains an enumeration of the chief symptoms of dyspepsia, whose name is indeed Legion; unfortunately, there is such a general familiarity with these symptoms, that few will fail to recognise the faithful portraits of some old acquaintance, and Dr. Leared's anatomical and physiological explanations of the greater number are clear and satisfactory. He has had many opportunities also of determining, by post-mortem examination, the dependence of many of them upon certain organic lesions: amongst others, that most distressing one of headach, which he constantly found associated with altered appearances in the duodenum. He dwells particularly upon the state of the skin, of the tongue, and of the throat of the dyspeptic, pointing out very clearly the indications afforded by careful examination of each, which should never be omitted. It does not escape him, either, to show how our diagnosis may be aided, and our treatment guided, occasionally, in obscure cases, by inspection and microscopic examination of matters vomited and of the several excretions.

Our author makes the division of dyspepsia into accidental and habitual; and this is a very correct view to take of the subject, for there are few who have not suffered, at some time or other, from this annoyance, and still they are not and would not wish to be considered confirmed dyspeptics, and all, even the most healthy, are liable to occasional digestive difficulties from various accidental causes. We quote, as a fair example of his style and powers of description, the following account of accidental dyspepsia from indulging in too great a variety; popularly it would be termed a bilious attack :

“A person partakes of a great variety of those dishes which luxury has made inseparable from a modern feast; soup, fish, rich ragouts, numerous sweetmeats, fruit fresh and dried, nuts, &c., and these are followed by an almost equal variety of drinks. The immediate effects may not be so marked as in the preceding kind of dyspepsia, but night brings retribution: a restless and feverish night is passed, or if sleep comes, it is feverish and fitful. Towards morning, the patient sleeps heavily through mere exhaustion, but awakens to begin the business or pleasure of the day, more fatigued than when he retired to bed. There is a foul taste in the mouth, and an unnatural sensation of heat causes a craving for cold water. Soda-water, from its coldness and sedative nature, is often substituted, and slight headach is felt; and constant eructations, the flavour of which is well compared by the patient to rotten eggs, give great annoyance. The headach, which is chiefly in front, is

worse on rising from bed, and is increased by stooping. Breakfast is almost untouched; his bowels are unmoved, and the pain and discomfort continue until dinner-time; then, if food can be taken, relief sometimes immediately follows. . . . But very often the symptoms are more severe; the headach is excessive, and described as 'splitting the head.' There are nausea and vomiting of foul-smelling, frothy masses, in which yesterday's dinner may be recognised. Severe, and at first ineffectual retchings ensue; and bile, almost pure, at last makes its appearance."

In treating of habitual indigestion, Dr. Leared makes several varieties—slow digestion; digestion with undue acidity; painful digestion; foul digestion; and imperfect digestion, with mental disturbance. The distinguishing symptoms of these several phases of the malady are pointed out clearly, and the peculiarities of each dwelt upon. Dr. Leared has adopted the method of illustrating each one of these varieties by a model or typical case, from his note-book—a method which brings what he would convey very familiarly before the mind's eye, and makes an impression upon the reader without wearying. No one can read these chapters without remarking the accuracy and truthfulness of the descriptions contained in them, and being struck with the extended opportunities which the author must have enjoyed for observation, and of which he has so fully availed himself. The pictures which he draws of the several kinds of dyspepsia are true to the originals as photographs, and assist materially in enabling one to recollect the distinctions between the different forms of the disorder.

The remaining sections of the book—those devoted to the very important subject of treatment—contain much useful information, but not a great deal that is novel to the practical physician, whose attention is so constantly directed to this subject, and who has so frequently to combat refractory and baffling symptoms. Dr. Leared makes a *resumé* of the several means of treatment usually adopted—dietetic, medicinal, and general, apportioning their due weight to each. Proper regimen and diet he shows to be, above all things, necessary; indeed, so essential is this matter, that he says "we must be despotic upon it;" but the difficulties experienced in this respect by every medical man have been encountered by him also. He says:—

"It is obvious that great judgment and due consideration are required in each individual case; and even when these have been fully exercised, the grand difficulty remains, of having our advice fully carried out. It is easier to have any amount of medicine

swallowed, no matter how nauseous, than to insure perseverance in a course of diet. Not only are good preliminary reasons necessary, but the patient becomes discontented, if the desired results do not immediately follow. But, while full co-operation with the medical adviser is necessary, much must be left to the discretion of the patient, since even in health no general rules apply; for, as I have elsewhere said, the requisite quantity of food varies with the period of life, constitution, and habits of the individual, as well as with other conditions. In quantity is also involved quality, as a much smaller amount of one kind of food will satisfy the appetite than another."

Dr. Leared is not dogmatic on the subject of early dining; he considers that habit to some extent, and position in society, should regulate this matter, at the same time giving the preference, when a choice is afforded, to early hours. But, as before mentioned, he considers the proper distribution of meals over the day as of the greatest importance. We know that the natural action of the human stomach is intermittent, and that the organ, when properly charged with aliment, should be allowed to dispose of its contents before any addition is made to them.

"We live," he says, "by what we digest, not by what we merely eat. An overplus of food is poison to the enfeebled stomach, because it prevents the digestion of even a moderate quantity.

"The diet generally suitable to the dyspeptic is that which combines most nutriment with least bulk. In a state of health, and especially when much exercise is taken, a certain bulkiness of food is necessary; but, in proportion to the degree of dyspepsia, concentrated nutriment answers best, the object being to nourish the body without oppressing the digestive organs."

Without entering deeply into the consideration of the properties of the various kinds of food, Dr. Leared glances at those most generally in use, pointing out their merits and demerits as articles of nutriment, and their bearing upon the prevention and treatment of dyspepsia. Hashes, stews, and rich-made dishes, are especially proscribed, and simplicity of diet is inculcated. Raw vegetables he does not look upon as very indigestible, and considers that the oil which is generally used with them is more to blame than they are. There is one fruit which he singles out for condemnation, because it is commonly regarded as harmless: that is, the pear, the eating of which he has known to greatly aggravate dyspepsia, for, even in their ripest state, pears contain an abundance of gritty material, which cannot be separated in the mouth. Bread, being an indispensable article of diet, should be of the very best qua-

lity, and should never be used by the dyspeptic unless, at least, two days old. In bad cases of acidity great advantage will be gained by substituting simple flour biscuit for bread. If there is one thing which disagrees more than another with all dyspeptics, it is pastry, with which may be classed sweetmeats of all kinds. The pernicious customs of smoking and snuff-taking are dealt with as might be expected by an enlightened physician and physiologist, and if the public would be advised in these matters by the author, the revenue derived from the "noxious weed" would soon experience a sensible diminution. The following extract regarding the use of water and alcoholic stimulants will explain the views which he entertains upon these matters:—

"In a large proportion of cases, water alone should be the habitual drink; its quality is therefore of great importance. The digestive organs of some persons are so susceptible of the impurities of this element, that they feel unwell if circumstances oblige them to drink water to which they are unaccustomed. Various earthy salts, especially sulphate of lime, are common impurities. There is considerable difference of opinion as to whether wine or other stimulants should be taken in dyspepsia, which I think has arisen from not sufficiently discriminating the various forms of the disease. The following is the sum of my own experience in this particular. A glass or two of good sherry is generally useful in simple, slow digestion; the contractions of the stomach are encouraged by the stimulant, whilst any tendency to fermentation is checked. In digestion with acidity, weak brandy and water is frequently appropriate, but it sometimes adds to the symptom in question. In painful digestion, stimulants are generally injurious, and in many cases a single glass of wine will severely aggravate an attack; but claret is least objectionable. In the painful affections of the empty stomach, stimulants are useful, and the patient has recourse to them intuitively. In foul digestion, stimulants are more likely to do harm than good, and especial care should be taken not to mix different kinds in the stomach. Malt drinks combine nutritive with stimulating properties, and are particularly useful in sustaining the strength between breakfast and a late dinner. A glass of good ale or porter, with a biscuit, often act as substitutes for substantial food, when the object is to avoid overloading the stomach. Care should, however, be taken, that the satisfying qualities of malt drink are not injudiciously allowed to take the place of stronger nourishment."

Dr. Leared does not forget to dwell upon the vast importance of attention to the skin—personal cleanliness and bathing; and the absolute necessity of abundant out-door exercise is also pointed out, of all descriptions of which the preference



is given, when it is practicable, to that on horseback; change of air and travelling also receive due consideration.

The treatment of dyspepsia and its various effects by medicine, receives its fair proportion of attention also. Dr. Leared speaks very highly of the beneficial effects of strychnia in certain forms of this disease, particularly in that attended with nervous debility.

“In that numerous class of cases in which abnormal sensations in various parts of the body, as the throat, the head, or the limbs, are experienced, it will generally be found useful. It is the best tonic for the class in which mental symptoms predominate, but it also possesses excellent local effects, and acts by increasing the tone of the muscular coats of the stomach and intestines. When these coats are relaxed, gases are generated, mainly owing to retardation of the aliment in the cavities. No remedy has in my hands proved so permanently effectual as strychnia against this inconvenience.”

Dr. Leared's remarks upon the use and abuse of certain other remedies: mercury, bismuth, nitrate of silver, taraxacum, cod-liver oil, &c., are practical, and entitled to much consideration; of the merits of pepsin he entertains a very low opinion, having tried it in numerous cases without much effect, and the result of a series of experiments, which he instituted to test its powers of digesting animal matters, proved it almost inert. He concludes with some very sensible observations upon the use of purgatives and the treatment of habitual constipation, which are well worth perusal. On the whole, we can recommend this little work as a useful manual of the subject upon which it treats, and welcome it as an addition to our medical literature.

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*On Asthma: its Pathology and Treatment.* By HENRY HYDE  
SALTER, M.D., F.R.S., &c. &c. London: Churchill.  
1860. 8vo, pp. 372.

THE pages of some of our weekly contemporaries have occasionally, for some years past, been enriched by papers on asthma by Dr. Salter, from which it has been evident that he has been carefully studying the nature and treatment of this distressing complaint. The volume now before us contains the results of his labours, and presents an amount of information on the subject such as is not to be found elsewhere. We rejoice that Dr. Salter has recast his clinical facts, and the conclusions he has arrived at, in this more complete and accessi-

ble form, and without further preface we proceed to give our readers some account of the treatise. First, we must let the author describe the sufferings produced by the disease, and the objects he has aimed at in his work:—

“But not only is asthma not an uncommon disease, but it is one of the direst suffering; the horrors of the asthmatic paroxysm far exceed any acute bodily pain; the sense of impending suffocation, the agonizing struggle for the breath of life, are so terrible, that they cannot even be witnessed without sharing in the sufferer’s distress. With a face expressive of the intensest anxiety, unable to move, speak, or even make signs, the chest distended and fixed, the head thrown back between the elevated shoulders, the muscles of respiration rigid and tightened like cords, and tugging and straining for every breath that is drawn, the surface pallid or livid, cold and sweating—such are the signs by which this dreadful suffering manifests itself. And, even in the intervals of health, the asthmatic’s sufferings do not cease: he seems well, he goes about like his fellows, and among them, but he knows he is altogether different; he bears about his disease within him wherever he goes; he knows he is struck—*hæret lateri lethalis arundo*; he is conscious that he is not sound—he cannot be warranted; he is not certain of a day’s, perhaps not of an hour’s health; he only knows that a certain percentage of his future life must be dedicated to suffering; he cannot make an engagement except with a proviso, and from many of the occupations of life he is cut off; the recreations, the enjoyments, the indulgences of others, he dares not take; his usefulness is crippled, his life is marred; and, if he knows anything of the nature of his complaint, he knows that his sufferings may terminate in a closing scene worse only than the present.

“And not only is asthma thus comparatively common and superlatively distressing, but it is peculiarly and proverbially intractable. The asthmatic is generally looked upon as an asthmatic for life, as one who, though he should suffer many things of many physicians, would be nothing bettered, but rather grow worse, and the treatment is regarded as palliative. It must be admitted that the remedies for asthma are of very irregular and uncertain operation; that probably there is no single remedy that is not inoperative in a large number of cases; that that which is useful in one is valueless in another, while there are many cases that resist all remedies. If this intractability of asthma were doubtful, the large number of remedies that have been suggested would be a sufficient proof of it.

“But, besides this, asthma is a disease about whose pathology more various and discrepant ideas prevail than about any other disease that could be named, and to this day, if we appeal to the written opinions of living authors, its absolute nature must be considered as still *sub judice*.

"I think, then, I shall not be undertaking a useless task if I attempt to throw some light upon the pathology, and lay down some rules for the treatment of a disease so comparatively common, so distressing, so intractable, and so obscure."

Beside this description of the disease, which is drawn, we fear, from a passage in the preface, from personal experience, we venture to adduce another, also drawn by no feeble hand, from personal experience, written by one who was formerly under our own care, but who, in consequence of political offences, was imprisoned at Bermuda, whose climate is excessively unfriendly to asthmatics, and where, for upwards of two months, he was never free from the disease.

"Dec. 3rd.—Another red morning has dawned, and finds me sitting, bent down on my chair, with weary limbs and dizzy brain, worn out with another night's long agony. It is the twelfth night since my head has pressed my pillow—Almighty God!—is the angel Sleep to visit me never more? All night in darkness, I have wrestled with a strong fiend in this cell—other wrestling than Jacob's at Penuel—and now at sunrise, when I can breathe somewhat more freely, the sense of deadly weariness comes upon me heavily. My feet are cold as marble: my body and head bathed in sweat. I look at my image in the glass, and verily believe my mother would hardly know me: my eyes have the wild fearful stare that one may imagine in the eyes of a hard-hunted hare, couched and gasping in her form; a cold dew stands in beads upon my forehead; my cheeks are shrunk and livid; my fingers have become like bird's claws, 'and on mine eyelids is the shadow of death.'—The Asthma demon has fled westward, keeping within the great shadow of the world,—riding in darkness like Satan. Ah! he will put a girdle round the earth, and be with me again at set of sun.—All tortured and weary wretches, all exiles and captives, long for the night; and the ambrosial night brings them Lethæan balm, and liberty, and home,—for those few blessed hours they may have back their youth, and tread their native land, and see the sweet eyes of those who love them.—And to me

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"But this, after all, is an unprofitable line of observation. If I once begin to write down my 'grievances,' I will but think the more of them. And I am resolved not to listen to myself on that topic. Moreover, if the night was bad, the morning is glorious, and is flooding the earth with heavenly splendour:—the heavy sighing of the wet sea-wind has sunk; and the waves that dismally tumbled and plashed all night against

the ship's side are now but a gentle ripple, trembling in the warm sun-shine. It is a deep calm.

"Slowly and painfully I prepared myself to go out; and have now basked in the sun for an hour on the pier. These December days (though the nights be cold) are as bright and warm as July days in Ireland. No wretchedness, on this side despair, could resist the soothing power of such a sky and scene, such Favonian airs and blue gentle seas. Strains of soft music from the band of the flagship in the bay come floating on the still air; and the cedar-tufted Bermoothes, with their white cottages and dark groves, are like a dream of Elysian tropic islands, where the Hesperian golden fruitage grows. Surely there is mercy in the Heavens; there is hope for mortal men. I am strong; I am well. Soul and body are refreshed; and I can meet again, and conquer again the demon that walketh in darkness."

Before developing his own views as to his pathology of the disease, Dr. Slater passes under examination several erroneous theories, that have more or less obscured the subject. Laennec, Copland, and Walshe have described a species of asthma under the names of nervous or hæmic asthma, as different from the spasmodic form; this affection—defined by Copland to be "anhelation from a feeling of want of a more complete respiration than the patient enjoys, the pulmonary expansion taking place with promptitude, completeness, and uniformity, so as to furnish a general puerile sound on auscultation"—Dr. Salter denies to be asthma, with which he says it has not one character in common. It is simply, he says, dyspnœa, depending probably on some peculiar state of the blood, as suggested by Dr. Walshe, and best seen in cases of narcotic poisoning, uremia, and anemia.

"In the hypothesis which he has thrown out to this effect, Dr. Walshe is probably quite correct, and it offers a rational solution of what, to my mind, was always a difficulty. I have often been puzzled at the panting dyspnœa of a chlorotic girl, not only on exertion, but when at rest, and have never before been able to give myself a satisfactory explanation of it. But, adopting Liebig's view of the part which the red globules play as the oxygen carriers, we see at once how anæmia would suspend the due oxygenation of the blood, inasmuch as it would directly diminish the agents concerned in that process; if there were half the blood globules, for example, half the oxygenation would go on, and we can easily understand how such arrears in the respiratory changes would give rise to instinctive respiratory efforts, with the object of re-establishing the balance. The dyspnœa of anæmia thus becomes at once intelligible, and fur-



nishes, in my opinion, a most interesting confirmation of the correctness of Liebig's views as to the relation of the red globule to blood-oxygenation. The fact is, the dyspnœa, in these cases of chlorosis, is as much an integral part of the diseased condition as any other symptom—the panting shortness of breath is as characteristic as the pallor of the complexion.

“If, then, this dyspnœa is no asthma at all, the free lung-expansion that characterizes it in no way invalidates the belief in the universal presence of bronchial stricture in true asthma.”

The theory of Dr. Bree,—that the asthmatic paroxysm, and the excessive muscular action that attends it, are merely an extraordinary effort to get rid of some peccant and irritating matter pre-existing in the air tubes, for the discharge of which the asthmatic paroxysm is the means and mechanism—is shown to be quite untenable: the fact being, that the free expectoration with which the paroxysm ordinarily terminates is the result of the attack, and not its cause.

Other writers have asserted asthma to be but the dyspnœa of bronchitis, a theory already shown by Dr. Gairdner to be incompatible with the clinical history of the disease, as is also the theory of Dr. Budd—that it is but the dyspnœa of emphysema or heart disease. Nor does the suggestion, that the paroxysm depends on paralysis of the bronchial muscles, meet with much more favour at our author's hands. Dr. Todd's supposition, that asthma depends on a morbid state of the blood, analogous to that which he believes to exist in gout or epilepsy, is regarded as nearly as foundationless as the others, though in certain cases it is admitted that there is reason to attribute the paroxysm to a morbid condition of the circulating fluid.

Having thus cleared the ground, our author lays down the following propositions, as containing the true pathology of the disease:—

“1. That asthma is essentially, and, with perhaps the exception of a single class of cases, exclusively, a nervous disease: that the nervous system is the seat of the essential pathological condition.

“2. That the phenomena of asthma—the distressing sensation and the demand for extraordinary respiratory efforts—immediately depend upon a spastic contraction of the fibre-cells of organic or unstripped muscle, which minute anatomy has demonstrated to exist in the bronchial tubes.

“3. That these phenomena are those of excito-motory or reflex action.

“4. That the extent to which the nervous system is involved

differs very much in different cases, being in some cases restricted to the nervous system of the air-passages themselves.

“5. That in a large number of cases the pneumogastric nerve, both in its gastric and pulmonary portions, is the seat of the disease.

“6. That there is a large class of cases in which the nervous circuit between the source of irritation and the seat of the resulting muscular phenomena involves other portions of the nervous system besides the pneumogastric.

“7. That there are other cases in which the source of irritation, giving rise to the asthmatic paroxysm, appears to be central—in the brain; consequently, in which the action, though excito-motory, is not reflex.

“8. That there is yet a class of cases in which the exciting cause of the paroxysms appears to be essentially humoral.”

These propositions are next examined in detail. That asthma is a nervous disease, is shown, our author argues—1st. By its causes, which are such as give rise to other diseases acknowledged on all hands to be nervous, such as fatigue and physical exhaustion, sudden or violent mental emotion, or causes that can affect the lungs only through the intervention of the nervous system, as gastric irritation, &c. 2nd. By its remedies, which are such as appeal to the nervous system, as anti-spasmodics, sedatives, direct nervous depressants, tobacco for example, stramonium, antimony, chloroform, and mental emotion. 3rd. By the periodicity of the disease; and, 4th By its associated and precursory symptoms,—as the quantity of limpid water passed in the early part of the paroxysm, white as pump water, like the nervous water passed in the students’ “funking room,” or like the urine of hysteria, or that of nervous headach; or as the neuralgia, drowsiness, and languor, or peculiar animation or hilarity of the previous day. 5th. Another circumstance in favour of the disease being essentially nervous, is the possible absence of appreciable organic change, as shown by post-mortem examination; and lastly, it is argued that the fact of the phenomena being muscular is almost proof positive that the nervous system is the seat of the primary derangement, this being a law with but few exceptions.

The second proposition, *that the phenomena of asthma,—the distressing sensation—and the demand for extraordinary respiratory effects,—immediately depend upon a spastic contraction of the fibre cells of organic muscle, which minute anatomy has demonstrated to exist in the bronchial tubes*—may, our author thinks, be almost assumed, but he thinks it well to prove it, for the sake of precise pathological views, as well as because it is a necessary stepping-stone to the succeeding propositions. He says:—

“It will certainly be an advantage if it can be shown beyond cavil that spasmodic stricture of the bronchial tubes is the only possible cause of asthma, that it is adequate to the production of all the phenomena, that it is a form of perverted physiology that may exist pure and uncomplicated with any organic disease, and that the view that would assign it as the sole essential condition in asthma is—what all pathological views should be—physiological and rational. I think, perhaps, the eliminative or exhaustive method of proof will be as good as any.”

This doctrine, which our own observations, as well as the facts collected by the author, lead us to believe to be, by far, too limited and restricted, he attempts to prove by the eliminative or exhaustive method. The sole constituent symptom of the disease is, he argues, *dyspnœa*—*dyspnœa* of a peculiar kind,—sudden in its access, intense and agonizing, following a state of perfect apparent health and ease, and relapsing as suddenly, perhaps speedily, and, it may be, without any expectoration, into ease and tranquillity again.

These phenomena do not, it has been proved, depend on heart disease, bronchitis, or emphysema; as these may be completely absent; and moreover, the *dyspnœa* of asthma is widely different from that which they produce.

“But the *dyspnœa* of asthma tells a plainer tale than this; it tells us not only what it is not, but what it is. It gives the most positive evidence of the narrowing of the air-passages. The asthmatic’s breathing is what our forefathers called ‘strait,’ what we call ‘tight;’ he feels as if a weight were on his sternum, as if his chest were compressed, as if a cord bound him, as if it would be the greatest relief to him if some one would cut his breast open and allow it to expand; he rushes to the window to get air, he cannot tolerate people or curtains about him, his clothes are loosened, and all the muscles of respiration tug and strain their utmost to fill his chest. But he can neither get air in nor out, he can neither inspire nor expire—his respiration is almost at a dead lock; he cannot blow his nose, can hardly cough or sneeze, cannot smoke a pipe, and if his fire is failing, cannot blow it up; he has hardly air enough to produce the laryngeal vibrations of speech. The chest is distended, indeed, to its greatest possible limit, the cavity of the thorax is enlarged both in the costal and diaphragmatic directions; the costal distention is shown by the fact, that the clothes that ordinarily fit will not meet over the chest by from one to two inches, while the descent of the diaphragm is shown by the increased girth of the abdomen and by the heart being drawn down to the scrobiculus, where it is seen beating plainly; such are the violent instinctive efforts of the respiratory muscles to overcome the obstruction to the access of air. But they are unavailing; the air that is without

cannot get in, and that which is within is locked up. In spite of the violent muscular effort, there is hardly any respiratory movement, the parietes of the chest cannot follow the action of the muscles; on listening to the chest the respiratory murmur is inaudible, even when not drowned by the wheezing; respiration is almost *nil*. Where, then, can this obstruction to the introduction and exit of air be? It must be in some part of the air-passages—the larynx, trachea, or bronchial tubes. In the larynx and trachea we know, from the symptoms, it is not. The fact of bronchial stricture, then, is certain.”

In discussing the third proposition, *that the phenomena of asthma are those of excito-motory or reflex action*, Dr. Salter overlooks or denies the power of muscle to respond to direct stimulation, and states that the contraction, consequent on direct stimulation is due to the stimulus being conveyed to minute ganglia scattered through its substance, it may be microscopic, and reflected to the muscular fibres,—a theory with which we cannot accord, but which it is not necessary to discuss at present. In this way he accounts for the operation of the effluvium of ipecacuanha, hay, &c. Impressions applied to parts more remote exert their influence through other portions of the nervous system. He divides these into three groups, as in gastric cases, where the irritation is applied to the pneumogastric nerves, and reflected from the medulla oblongata through the pulmonary branches of the same nerves. In other cases, he says, it is the organic nerve is concerned, as where the fit is produced by a loaded rectum; and in a third class, he says, the cerebro-spinal system is the recipient of the irritation, as in a remarkable case where the application of cold to the instep immediately produced the asthmatic condition. A more correct physiology would embrace all of these in one group, and refer them to the spinal axis.

The illustrations of the seventh proposition are so interesting and important that we must give them in full, remarking that Graves, in his Clinical Medicine, mentions a case analogous to the first of those here mentioned, but, if possible, illustrating more strongly the point referred to.

“But there is yet again another class of cases that have suggested to my mind the belief that asthma is sometimes *central*, not reflex, in its origin; that it may originate in irritation of the brain itself, or the spinal cord. The two following cases appear to me to be examples of this kind of ‘*central*’ asthma. The first was communicated to me by my brother, Mr. James Salter, and occurred under his own observation. The patient was a boy of about ten years old, and the disease acute hydrocephalus, which ran a fatal



course in about a fortnight. Five days before his death he was suddenly seized with an attack of dyspnœa of the asthmatic kind; it was very severe, lasted about half an hour, and then entirely vanished. The following day he was seized with a precisely similar attack; but this was the last; the symptoms never re-appeared, and the patient sank in the ordinary way, from the brain disease, about four days afterwards. He had never before suffered from asthma; there were no chest symptoms either before or after the attacks—no cough, no expectoration. My brother is very precise as to the nature of the dyspnœa; he says there was nothing cardiac about it—no panting, no orthopnœa—but that it had the labouring ‘difficult’ character of asthma. I conceive that in this case the bronchial spasm was a phenomenon of deranged innervation from central irritation, analogous to the jactitations, rigidity, and convulsions characteristic of hydrocephalus.

“The other case was that of a man of about fifty years of age, subject to epilepsy. His fits had certain well-known premonitory symptoms, and occurred with tolerable regularity, I think about once a fortnight. On one occasion his medical attendant was sent for in haste, and found him suffering from violent asthma; the account given by his friends was, that at the usual time at which he had expected the fit he had experienced the accustomed premonitory symptoms, but instead of their being followed, as usual, by the convulsions, this violent dyspnœa had come on. Within a few hours the dyspnœa went off and left him as well as usual. At the expiration of the accustomed interval after this attack the ordinary premonitory symptoms and the usual epileptic fit occurred. On several occasions (I do not know how many) this was repeated, the epileptic seizure being, as it were, supplanted by the asthmatic. Of these four points, my informant, who was the medical attendant, seemed certain;—that there was nothing amiss with the lungs either before or after the attacks, that the character of the dyspnœa was asthmatic, that each attack of asthma occurred at the usual epileptic period, and that they were preceded by the premonitory symptoms that ordinarily ushered in the epilepsy. I think that such a case admits of only one interpretation—that the particular state of the nervous centres that ordinarily threw the patient at certain periods into the epileptic condition, on certain other occasions, from some unknown cause, gave rise to bronchial spasm; that the essential diseased condition was one and the same, but that its manifestations were altered, temporary exaltation and perversion of the innervation of the lungs supplanting unconsciousness and clonic convulsion. Bearing in mind the many points in their clinical history that asthma and epilepsy have in common, this case is one of peculiar interest.

“To this same category of *central* asthma we must, in strictness, assign those cases in which the paroxysm is brought on by violent emotion, as in that remarkable instance I have related of the gentleman who had, on two distinct occasions, violent spasmodic asthma suddenly induced by alarm, from the fear that he had poisoned his

wife. In such a case, the seat to which the stimulus is primarily applied is the brain itself."

The eighth proposition refers to cases where the paroxysm is produced by particular materials mingled with the blood, and therefore so far humoral. The instances adduced of this are where the fit occurs after certain substances have been taken into the stomach, and a sufficient interval has elapsed to allow of their being digested and absorbed into the blood, their effect being produced, the author says, by their passage through the bloodvessels of the lungs, where they cause an irritation of the nerves of the lungs, which is conveyed to the nerve centres, and reflected thence to the muscles, causing their spasm. Why their action is not at once attributed to the influence of the centres, we can scarcely imagine.

We have now developed pretty fully the author's views of the nature of asthma; and, on the whole, we think he has just missed the true explanation of the phenomena, owing to his attributing the dyspnœa exclusively to the spasm of the bronchial muscles, and a consequent impossibility of drawing a sufficient quantity of air into the lungs.

The clinical observations recorded by himself disprove this theory. He has shown that during the paroxysm the chest is resonant all over on percussion—that it is distended to the fullest extent—its circumference increased by at least two inches—the intercostal spaces widened—and the diaphragm pulled down to the furthest limit.

Now if the ingress of the air were impeded, this state of the thoracic walls could not be produced by any amount of muscular action. We know that the cartilages of the ribs yield, and the peculiar state called "pigeon breast" is produced, under such circumstances, but the chest is not expanded.

A careful examination of all the phenomena proves, that the paroxysm of asthma is caused by a state of spasm—tonic or tetanic spasm—of all the muscles of inspiration, under which head we include the bronchial muscles, whereby the cavity of the thorax is expanded to the greatest possible degree, and the lungs are kept filled with air, the stagnation of which in the lungs causes the state of asphyxia so characteristic of the disease. This state of the muscles is well described by Dr. Salter in the following passage:—

"On stripping an asthmatic in the height of a paroxysm, an admirable example is seen of the immense array of muscles that become, on an emergency, accessory to respiration, and some idea is formed of the toil of the asthmatic, and the extremity of those suffer-

ings that necessitate for their relief such intense labour. All the muscles passing from the head to the shoulders, clavicles, and ribs are rigid, and the head is rendered a fixed point from which they can act on their respiratory attachments. Ordinarily these muscles, such as the splenii and scaleni, have their inferior attachment fixed, and move the head and neck; but now their upper attachment is fixed, and from it they act as mediate or immediate elevators of the ribs and distenders of the thoracic cavity; and this is how it is that the asthmatic is incapable of moving his head. By the contraction of the *trapezius* and *levator anguli scapulae*, the shoulders are raised to the ears, in order that the muscles proceeding from the shoulders to the ribs may act at an advantage as elevators of these latter. The muscles of the back are so engaged in respiration that they cease to support the trunk, and the gait becomes stooping. At every inspiration the *sterno-mastoids* start out like cords, and produce by their sudden prominence a deep pit between their sternal attachments. I have already referred to the gaping descent of the lower jaw at each inspiration. . . . .

“Meantime all the muscles that increase the capacity of the chest are straining their utmost and starting into prominence at each inspiration; as each breath is drawn, every muscle is thrown out into bold relief, and since there are hardly any muscles of the trunk that are not mediately or immediately respiratory, the whole muscular system of the trunk may be mapped out in every part of its detail. The straining muscles are rendered all the more conspicuous from asthmatics being generally so thin.”

Nor are the other phenomena less characteristic. The respiratory movements are unfrequent, not more than nine or ten in the minute; the relative length of inspiration and expiration is reversed—instead of the inspiration being longer than the expiration, as is normally the case, the expiration is longer than the inspiration, four or five times as long. This difficulty of expiration is well and truly described by the author, though he has missed the explanation of it:—

“In the most intense asthmatic breathing the difficulty of getting the air out of the chest is so great, the expiratory movement (with all its effort) so slight, and the quantity of air expelled so small, that, as if aware that the chest would never be emptied at that rate in time for the next respiration, a violent involuntary effort comes to the assistance of the expiration, and pumps out the remainder of the air with a sudden jerk. This termination of a prolonged, ineffectual, and almost motionless expiration by a sudden expiratory jerk is characteristic of the intensest asthma, and occurs in no other form of dyspnoea whatever; whenever we see it we may be sure that the bronchial spasm is extreme. It is at expiration, too, that the asthmatic experiences the greatest distress.”

In one of the narrative cases (Case VI.), constituting the appendix to the book, this state is fully detailed. In the patient who narrates his own case, we recognise a dear and intimate friend of our own, one beside whom the present writer has often sat when he was labouring under one of his fits—a man of rare intelligence, well able to analyze his sensations; and all the more so, from his having himself studied medicine in early life—and one by whom our attention was early drawn to this fact<sup>a</sup>.

“The balance seemed quite destroyed between *inspiring* and *expiring*. In spite of myself I was forced to keep tugging *in* the air with all the muscles and joints of my body, while it seemed as if it hardly went *out* again at all. A *cough*, as an expiration, was a relief, but a relief that seldom came in those fits till near the end.

“Besides the peculiar asthmatic sound of respiration, I used to accompany almost every tug for breath with a sort of groan, which (I imagine) helped me like the *heck* of the axe-man, or served, as it best might, in place of an expiration proper.”

It seems sufficiently plain that the muscles of inspiration are, during the fit, in a constant state of tonic contraction, and that the great difficulty is to empty the chest so as to allow of its being refilled with fresh air;—for this purpose the muscles of expiration are constantly contending with those of inspiration, and require the aid of a strong voluntary effort to overcome them. It appears, moreover, that as soon as the volition is suspended, the inspiratory muscles immediately regain the victory—the chest is again distended—“the moment the expiration is completed, the inspiration begins—there is no pause—the normal post-expiratory rest is lost.”

The function of the bronchial muscles has long been a subject of discussion: that they are not active agents in expiration, as was at one time thought, may be easily proved, and is now agreed on. The author thinks that they are of use for emptying the minuter tubes of mucus, partly, perhaps, by a peristaltic movement, and partly by narrowing the tubes where necessary, so as to add force to the explosion of coughing. They also, he believes, serve to exclude noxious matters from getting into

<sup>a</sup> In Vol. xiii. of our First Series will be found a very valuable paper, entitled, “The Journal of an Asthmatic,” which was contributed at the request of Dr. Stokes, by this same gentleman. In it attention is drawn to this want of expiration. “In these dreams,” he says, “I wanted the power of *expiration*.” He was cured of his asthma by a voyage to Van Dieman’s Land, and residence there. It is a remarkable coincidence that a lady who now resides in the house where the disease manifested itself in him, and where he suffered almost constantly from it, has become liable to it, though free from it before living there.



the air-cells, and regulate the quantity of air distributed to the several portions of the lung. That they may take part in these several actions, is possible; but these are merely secondary actions. That they produce a general narrowing of the bronchial tubes during expiration, as he further suggests, we cannot believe. Of the several suggestions that have been made as to their proper function, we consider that which classes them as muscles of inspiration accords with the greatest number of facts. It is to be remembered that the tubes are but ducts, not the essential part of the organs of respiration; that, during inspiration, it is important that the air-vesicles should have room to expand as much as possible, and that the tendency to vacuum in the thoracic cavity should be as great as possible. This is accomplished chiefly by the expansion of the thoracic cavity, but at the same time the bronchial tubes are narrowed and compressed by the contraction of their muscles, so as allow the air-vesicles the utmost room to expand. It is to be remembered that these muscles have not been demonstrated on the minutest tubes, or surrounding the vesicles, and that Kölliker's statement, that they probably exist in these parts, is merely speculative.

The well-known fact that in health the sound of inspiration is about five times longer than that of expiration—Fournet estimates the sounds as 10 to 2—can easily be explained on this supposition: during inspiration the tubes are narrowed, and the air is long in passing through them; during expiration the muscles are relaxed, and the tubes dilated, allowing the air to pass through them in a larger volume, and more quickly, and hence the short sound of expiration. Thus, these muscles are proved to be muscles of inspiration. In asthma they, like all other muscles of inspiration, are in a state of persistent contraction, and hence the prolonged expiratory murmur, in this case, longer than that of inspiration, because of the difficulty with which the inspiratory muscles are overcome, and the slowness with which the air is expelled.

The almost total absence of vesicular murmur in asthma indicates the stagnation of air in the pulmonary vesicles. It is stated by Laennec and Williams that the murmur may be restored by making a forced and prolonged expiration, and then inspiring quietly; but the author states that the dyspnoea is increased by expiring, and relieved by inspiring, and considers his experience to be thus at variance with that of Laennec and Williams; possibly the two statements may be reconciled. Without special observations we cannot undertake to pronounce on the question; but we have no doubt the vesicular

murmur may be restored by the method mentioned by Laennec and Williams, and this fact we look on as corroborative of our own view of the pathology of the disease.

In concluding his chapter on the pathology of the disease, Dr. Salter sums up his remarks as follows:—

“In what, then, does the peculiarity of the asthmatic essentially consist? Manifestly, in a morbid proclivity of the musculo-nervous system of his bronchial tubes to be thrown into a state of activity; the stimulus may be either immediately or remotely applied, but in either case would not normally be attended by any such result. There is no peculiarity in the stimulus, the air breathed is the same to the asthmatic and the non-asthmatic, the ipecacuan powder, the hay-effluvium, is the same in both; nor, probably, is there any peculiarity in the irritability of the bronchial muscle; the peculiarity is confined to the link that connects these two—the nervous system, and consists in its perverted sensibility, in its receiving and transmitting on to the muscle, as a stimulus to contraction, that of which it should take no cognizance. In those cases where the spasm is produced by some irritant applied to the air-passages themselves, this perverted irritability is confined to the bronchial nervous system. The exact seat of the perverted nervous action in those other cases where the stimulus is remote, is more doubtful. Take, for instance, that case in which cold water thrown on the instep immediately produced asthmatic dyspnoea. Was the cerebro-spinal nervous system in fault here? Did it transmit to the nerves of the lungs a morbid stimulation, or was the fault, as in the other cases, confined to the pulmonary nervous system—to its being morbidly affected by a nervous impression perfectly normal? These are questions that in the present state of our knowledge it would be difficult or impossible to answer. At any rate, it is clear that the vice in asthma consists, not in the production of any special irritant, but in the irritability of the part irritated.”

We think he might have spoken more definitely, had it not been for his attributing the disease too exclusively to the contraction of the bronchial muscles. In the slight and transient attacks of asthma produced by the inhalation of irritating gases, or effluvia, the disease arises very probably from the spasmodic contraction of the bronchial muscles alone, caused either by the direct irritation of the muscular fibres, or through the medium of nerves and microscopic ganglia. The fully developed attacks we have no hesitation in referring to the cerebro-spinal nervous system. If we accepted the teaching of Schröder Van der Kolk and Schiff, we might localize the diseased action in the medulla oblongata and lateral columns of the spinal cord, but in our review of Van der Kolk's work we have shown reasons for not accepting his teachings on this

point. He has, however, established the fact, that muscles that are associated in action are supplied by nerves arising from special groups of mutually connected ganglionic corpuscles, from which it follows that irritation of this group of cells will throw the entire group of muscles into action. Van der Kolk has also shown that, "while the motor branches of spinal nerves are distributed to muscles, the sensitive branches of those nerves are distributed to the skin covering the parts moved by those muscles."

By the aid of this law we advance a step further in locating the seat of irritation in the nervous centres. Dr. Salter has found that itching under the chin, over the sternum, and between the shoulders, is a frequent, perhaps constant, premonitory symptom of the attack. This is evidently a subjective sensation; it arises from some irritation in the nerve centres, which is, as usual, referred by the mind to the extremities of the nerves; and as these are distributed to the skin covering the parts moved by the muscles of inspiration, we infer that there is an irritation at the roots of the nerves by which these muscles are supplied:—

"One curious symptom of asthma, which I have found present in a large number of cases (I am not sure it is not universally present), but which I have never seen noticed in any treatise on the subject, is *itching under the chin*. I have often known that the breathing of asthmatics was tight, and told them so, from seeing them scratching and rubbing their chins. The itching is incessant, and of an indefinite, creeping character; but although it is impossible to help scratching it, the scratching does not relieve it. It is often accompanied with the same itching sensation over the sternum and between the shoulders, especially between the shoulders. It appears the moment the first tightness of breathing is felt, and goes off when the paroxysm has become confirmed—indeed, I think it is more pronounced in those slight and transitory tightenings of the breathing to which asthmatics are so liable (as, for example, after laughing), than in regular attacks. But I think it is the most strongly marked of all in the asthma that accompanies hay-fever. The sternal and interscapular portion of this itching is, I think, of easy explanation, its distribution to the chin is less easy to understand. According to the law that the pain arising from the irritation of a viscus shall be referred to the superficies, front and back, in the middle line, and at a level with the viscus (a law illustrated by the seat of the pain in stomach, bowel, and uterine disease), the seat to which the sensation from bronchial irritation is referred is the sternum and between the blade-bones. Thus, in bronchitis, the raw, scraping feeling that accompanies cough is sternal and interscapular; so that in relation to this asthmatic itching the fact would

appear to be simply this—that while the impression on the bronchial nervous system produced by inflammation of its mucous membrane gives rise to sternal and interscapular *pain*, that produced by spasm of these tubes gives rise to sternal and interscapular *itching*. The itching of the chin must, I think, be of the same reflex character, and admit of the same explanation, but the reason of its locality is less apparent.”

This morbid irritability existing in the nerve centre will be called into action by stimuli strictly normal in character; hence it is that cold applied to the instep, a loaded rectum, or an indigestible meal, will excite an attack of asthma; and we can easily understand that the presence of certain matters in the blood, circulating through the nerve centres, will have a similar effect.

In many respects there is a close analogy between epilepsy and asthma. Van der Kolk has shown that in epilepsy there is a morbid irritability of the medulla oblongata, and the circumstance that this irritability affects the muscles of the trunk and extremities—while in asthma the muscles of the trunk only are affected—lends some probability to the theory of Schiff, that while the anterior columns of the spinal cord preside over the motions of the extremities, the lateral columns govern those of the trunk only; and, if other circumstances permitted, might induce us to localize the irritation of asthma in these lateral columns, and the portion of the medulla oblongata connected therewith.

The case already quoted from Dr. Salter—in which asthmatic paroxysms took the place of, and became substitutes for, epileptic paroxysms—forcibly indicates the analogy between the two diseases; and the fact that the asthmatic paroxysm, like the other, serves by its explosion to relieve the system for a time, bears in the same direction. We may observe that, in epilepsy, it is chiefly the muscles of expiration that are affected, instead of those of inspiration, as in asthma; and the spasms of the muscles in epilepsy are at first of the same *tonic* character as in asthma, though they soon assume the *clonic* form.

The chapters of this book on the treatment of asthma are of extreme value, and are the fullest and most complete that we are acquainted with. The treatment resolves itself into that of the paroxysm and that required during the intervals; and although the last is the real treatment of the disease, while the treatment of the paroxysm is merely the treatment of a symptom, yet the paroxysm being, in asthma, potentially, though not essentially the disease (for it is its sole manifestation, the only source of suffering, and the cause of those orga-



nic changes in the heart and lungs by which alone asthma threatens life), its treatment, our author very justly remarks, holds the first place in the therapeutics of the affection. If the paroxysms are mitigated, the disease is rendered proportionately trifling—if they are prevented, the disease is extinguished.

“The first thing to be done on being called to a patient in a paroxysm of asthma, is to ascertain if there is any exciting cause actually present and in operation, and if so to remove it. An undigested meal or a full rectum may, as peripheral irritants, produce bronchial spasm; the one I think through the pneumogastric nerve, the other through the sympathetic, and thus an emetic which relieves the one, and an enema (or any other means) which evacuates the other, may put a stop to the attack. I have previously mentioned a case in which the occurrence of an attack was entirely determined by the loaded or empty condition of the rectum: if the patient retired to bed without the bowels being relieved, he was sure to be awake in the night with asthma; if they were moved before going to bed, he awoke at the usual time in the morning well. The relief obtained by an emetic is well known.

“At once ascertain, then, the condition of the patient in these respects, inquire what he last ate, and when he ate it, and if his bowels are loaded; and if there is any source of offence in either situation—stomach or lower bowel—secure its immediate evacuation. Ascertain, too, the state of the air he is breathing, if there is in it any known or unknown irritant, any of those subtle emanations of which asthmatics are so sensible, if there is a hay-field near, or ipecacuanha powder in the room, or dust, or smoke, and if so, let the removal from these influences be the first step taken. Inquire, too, if the patient has ever been seized with an attack in the same place before, if he has had any reason to imagine that that particular air did not agree with him, or if in any local peculiarities it resembles places that he has previously found offend his asthma. If so, get him away at once, never mind how difficult it is to move him, transport him to some place or some *kind* of situation known to agree with him; very likely before he has gone a mile or two he will be quite well; whereas, all treatment will be powerless as long as he is under the influence of the injurious air.

“Let it be your first care, too, to place your patient in a favourable position;—get him out of bed and bolster him up in an arm-chair, and place before him a table of convenient height, with a pillow on it, on which he may rest his elbows, and throw himself forward. It is quite surprising, almost incredible, how much comfort this will give, and not only so, but how it will actually relieve the breathing and dispose the spasm to yield. Sometimes the patient’s breath is so bad that he cannot sit; the same arrangements must then be made for him in a standing posture.

“But if, as will probably be the case, the spasm persist in spite

of these preliminary measures, and if no exciting cause can be discovered, by whose removal the paroxysm may be at once arrested, our next step is to cast about for some remedy by which we may hope to cut it short. In our choice of this we shall be very much influenced by our patient's former experience. Few asthmatics suffer long from their disease without having discovered what particular remedy is most efficacious in their case, and in this respect different cases of asthma vary so much, and display such a caprice, that I really know of no other guide except the patient's experience."

The class of remedies that Dr. Salter has found most benefit from in the paroxysms are depressants, or contra-stimulants, a class that exercises, he says, the most singular and powerful effect over the asthmatic condition, greater and more immediate than any other he knows, except, perhaps, mental emotion. The drugs of this class with which he is most familiar are ipecacuanha, tobacco, tartar-emetic. He believes their *modus operandi* to be neither as emetics nor expectorants, but as direct depressants, relaxing the spasm of the bronchial tubes. Of the three drugs, he regards ipecacuanha as the most manageable, and as entailing the least suffering.

Tobacco is the most speedy and effectual; tartar-emetic resembles tobacco in its action, but the nausea and collapse it produces are long and tedious. Remedies of this kind, given with a view to cutting short the paroxysm, should be given as early as possible, and for two reasons,—first, because it is much easier to break through the paroxysm when it is but just established. The other reason is, that if the spasm *does* yield in spite of having been some time established, the recovery is not so complete as if the remedy had been applied immediately on its appearance.

"It is a difficult thing for the asthmatic, I know, overwhelmed with sleep as he is, and generally with a peculiarly heavy drowsiness upon him, to leave his bed or light and smoke his pipe; but he *must* do it; he must rouse himself fairly up, and adopt at once those remedies that in his particular case are most efficacious. In fact, the treatment of the asthmatic paroxysm should be so prompt as to be almost rather preventive than curative: in the treatment of no disease is the injunction '*obsta principiis*' of more vital importance.

"One is sometimes asked—Which is the best form of tobacco to use, a cigar or a pipe? I think a pipe has the advantage of more certain strength; cigars vary so much, even the same sort. The tobacco that I generally employ is bird's-eye, as being a mild tobacco, and one by which you run little risk of inducing alarming collapse. *Shag*, or any other of the strong tobaccos, should not be used by the uninitiated, as the collapse they produce is apt to become protracted

and unmanageable. For ladies and young children, a few whiffs of a mild cigarette are quite sufficient.

"Of ipecacuanha, I think the powder is better than the wine. I never give a very small dose, it is uncertain and teasing. I would say, always give such a dose as will be certain to secure its own prompt rejection. I never give less than twenty grains, however young the patient may be; it never does harm.

"But ipecacuanha is a nauseous thing, and to those who have frequently taken it as an emetic, it becomes almost intolerable. I have lately discovered that it may be taken very pleasantly and very efficaciously in the form of some strong ipecacuanha lozenges made by Messrs. Corbyn, of 300, Holborn. They are about four times the strength of ordinary ipecacuanha lozenges; three of them will produce prompt vomiting. They are very convenient, too, for keeping up a slight nausea; and for children they are invaluable. If vomiting is desired, they should be bitten and ground up in the mouth and swallowed at once.

"There is one circumstance that greatly detracts from the utility of tobacco in the treatment of asthma, that practically indeed almost destroys it. Our adult male population have so habituated themselves to its use, that they have lost the susceptibility to its full influence, and cannot induce complete collapse by any amount of smoking. Now adult males constitute by far the majority of the subjects of spasmodic asthma; and thus the habit of smoking has rendered powerless, in a large number of cases, what I think may, without any qualification, be called its most potent remedy.

"To the practical I need not apologise for these trifling hints, of which I know they will recognise the value."

Coffee is one of the commonest and best reputed remedies for asthma, acting, our author believes, by its *agrypnic* properties. He gives the following hints with regard to its administration:—

"1. It cannot be given too strong. Unless sufficiently strong to produce its characteristic physiological effects, it does no good, but rather harm; moreover, if given very strong, it need not be given in much bulk, and quantity is a disadvantage—its effect is less rapid, and it oppressively distends the stomach.

"2. I think it is best given without sugar and milk—pure *café noir*.

"3. It should be given on an empty stomach; if given on a full stomach, it often does great harm, by putting a stop to the process of digestion: indeed, so much is this the case, that I consider coffee accompanying a meal, especially late in the day, so peculiarly apt to induce asthma, that it deserves to be classed among its special provocatives. I have mentioned elsewhere, the case of an individual who never dared to take the usual after-dinner cup of coffee—it would make the simplest dinner disagree with him. But the same

asthmatic found in strong coffee, on an *empty stomach*, one of his most valuable remedies.

“4. For some reason or other, I do not know why, it seems to act better if given hot—very hot.”

Chapter X. is devoted to the “Treatment of the asthmatic paroxysm by sedatives.” The principal remedies of this class are, first, tobacco in sedative doses, which is very efficacious, but liable to produce collapse; second, chloroform, one of the most powerful and speediest remedies, and worthy, perhaps, of the first place of all; third, opium, which Dr. Salter does not commend; fourth, stramonium; fifth, lobelia; sixth, Indian hemp—all of which are uncertain, and their preparations variable in strength; seventh, ether, which he has seen do good in but one case, though he has given it in scores, and in many it produces a disagreeable oppression, and even increases the spasm.

Chapter XI. is on the treatment of the paroxysm by the inhalation of the fumes of burning nitre paper. This is a remedy that we have been in the habit of prescribing for many years, and always in cases of *pure* asthma with the greatest benefit; even where there is bronchitis present the relief derived from its use we have often found very considerable, though Dr. Salter does not seem to have found it so. He gives many cases illustrating its use, and the following hints for its application:—

“Let me, in conclusion, give a few practical hints with regard to the making of the nitre-paper. And this is not an unimportant point, for patients will find it more convenient to prepare the paper themselves, and unless it is properly made, it will not produce its beneficial results. The object is to have as much deflagration of nitre and as little combustion of paper as possible. For that purpose the paper must not be very thin, or it will not take up sufficient nitre; nor very thick, or it will make the fumes too carbonaceous; but it must be moderately thick, and very porous and loose in its texture, so as to imbibe a sufficiency of the solution. The strength of the solution should be saturate at the ordinary temperature. If a saturate solution is made with warm water, and the paper is very bibulous, it becomes too much impregnated with nitre—too strong a paper, and burns too fast, with a sudden explosive flame. There should be no brown smoke in its combustion, but light, clear, white fumes. Those who have had a good deal of experience with this remedy, tell me that they find the red blotting-paper, of moderate substance, the best. Some blotting or filtering papers appear to have a good deal of wool in them; they are loose, thick, and coarse. They should be particularly avoided, as they yield, on burning, a smoke of a particularly irritating and



offensive kind, with a smell something like that of brown paper smoke, only worse. The nitre-paper, when once made, should be kept in a dry place, and then will not be the worse for any amount of keeping; but if it gets damp it does not burn with sufficient freedom, and should then be dried before using.

“The following is the way in which an asthmatic gentleman tells me he has been accustomed to make paper that answers perfectly well:—‘Dissolve four ounces of saltpetre in half a pint of boiling water; pour the liquor into a small waiter, just wide enough to take the paper; then draw it through the liquor, and dry it by the fire; cut it into pieces, about four inches square, and burn one piece in the bed-room on retiring to rest at bed-time.’ I have tried this method of preparing the paper myself, and find that it burns perfectly well, and is very efficacious; but I think *two* pieces are not at all too much to burn at once.”

In the cases of asthma that have come under our own observation, the treatment that we have adopted for the paroxysm has always been, in the first place, an emetic, for which we prefer the sulphate of zinc, which we have found as efficacious as ipecacuanha, more speedy and less depressing. We dissolve thirty grains in a tumblerful of water, and allow the patient to drink half of it, and to take the remainder in ten or fifteen minutes, if necessary; generally relief is obtained immediately after swallowing the second dose. As soon as the stomach is emptied, and the vomiting has ceased, we give a cupful of strong hot coffee, without milk or sugar, and containing twenty or thirty drops of laudanum; and, at the same time, we direct the nitre paper to be burned in the room. The relief from this treatment is generally prompt and complete. A medical friend, subject to asthma, tells us he prefers mustard as an emetic; we believe it is not very material whether it, zinc, or ipecacuanha be used.

Chapter VIII. treats of the therapeutical influence of locality in asthma. All who know anything of asthma are familiar with the great influence of locality on the disease. Dr. Salter gives many examples of this. On the whole, the air of cities agrees best with asthmatics. Many patients can breathe only in the smokiest and densest parts of smoky towns; others are free from the disease only in high, dry situations, with a clear, bracing atmosphere; while others prefer the seaside, or can only live in comfort on board ship. It seems impossible to lay down any rule as to selecting situations for patients affected with this disease. We have known patients to travel sixty or seventy miles to Dublin of a winter's day, and that before we had railways, to obtain a night's sleep after

a week of suffering; and others, we have known, who suffer more in Dublin than elsewhere. Dr. Salter gives very many very interesting cases, illustrating the effects of locality and the great caprice of the disease. Even the change of a few yards, or moving from the back to the front of a house, will, sometimes, afford relief. But, as a general rule, that suggested by Dr. Salter is, we believe, the best, viz., that air the most opposite to that in which the patient suffers most, is likely to prove the most beneficial.

Often repeated experiments will succeed in discovering a situation where entire freedom from the disease may be secured. Abernethy, in his Lectures, records the case of a man who could only breathe in a room containing the fumes of sulphuric acid, which is even more extraordinary than any of the cases recorded by the author; and Graves mentions, in his Clinical Lectures, having called one winter's day on two asthmatic patients residing in the same street, one of whom had his window open, though suffering much from the cold, lest there should be any smoke; and the other had his room full of smoke from a coal fire, and was in the habit of having the chimney partially stuffed to insure the room being filled with smoke, as nothing else gave him freedom from his asthma.

The remaining chapters are on the dietetic and hygienic treatment of asthma, and are most valuable. It seems scarcely necessary that we should go through the form of recommending this book of Dr. Salter's to our readers, but we do recommend it most sincerely.

## PART III.

### MEDICAL MISCELLANY.

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*Case of Hydrophobia.* BY ALLEN FRENCH, F.R.C.S.I., Surgeon to the Killeroran Dispensary Co. Galway.

ON January 16th last, I was called to see a boy named Matthew Farrell, residing in Clishstohor, in the parish of Killian, Co. Galway, aged 21 years, a labourer. It was told me he was suffering from difficulty of breathing, &c. &c. On my visiting him I found him in bed, covered *only* with a coarse sheet, and he was holding the upper part of it close to his neck; I perceived at once that he was in an excited state, and he chiefly complained that "the sweat was smothering him;" he also said that he felt something coming up his throat and taking the breath from him. The saliva was gathering about the fauces, and he was constantly striving to get rid of it by spitting; he screeched and screamed *aloud*, began to toss himself about in the bed, plunge, and kick, so that two men had to prevent him from hitting his head against the wall; he used then to exclaim that he felt it coming on him, and that it would choke him; the fit lasted only a short time; there was a wildness about his look and manner; he spoke as one in great excitement; his skin was moist; pulse extremely quick; pupils dilated; still, he answered every question rationally, and described his feelings accurately; though the day was frosty he could not bear anything over him except the sheet. I asked him how long he was ill, and how he felt it coming on him; he stated that on the night of the 31st of December he was at a wake; that gradually he felt the perspiration coming on, and at last that he thought the crowd of people at the wake were smothering him. I heard that the day after he was at the wake, he was working in the field, and on the following day he was after sheep, and he was heard shouting and screaming through the fields as one out of his mind. Every five minutes he would interrupt me and say: "If you can cure me of the sweat, I will be well;" and then at once he would fall into one of the fits. As I before mentioned, he did not lose consciousness either before or after the fit.

His father, about two years ago, had to be tied and sent to the Lunatic Asylum; he recovered, and was now attending the boy. Although I had his (the father's) case before me, I suspected in this boy hydrophobia. I asked him would he take a little medicine from me; he said no, it would choke him. I told him it might do him good, and he ought to take it; so he said when the fit was over, he would try and take it. I waited until it was over, and then I gave him some of a mixture I had with me (there was some tartar-emetic in it); with a great effort he drank it. He did not appear to be excited by water or fluids; it was the dread of drinking that excited him most; I asked him if the light affected him; he said not; but I was told the fits were more frequent by day than by night. I walked out and asked his mother if at any time she had heard of his having been bitten by either a cat or a dog; she denied having ever heard that he was. I returned and asked himself, he at once stretched out his hand and showed me where his index finger had been bitten by a cat more than twelve months ago, which put its teeth into the bone, but he said he killed the cat in the forge where he was bitten. I left him for about an hour or two; when I returned, he took me by the hand, and said he was better, and he hoped I would cure him. The emetic acted on his stomach, and removed the saliva from his mouth, which gave him great relief; still he had the consciousness of approaching death. He ate a little bread after his stomach was acted on by the medicine, and drank a little, although with great difficulty. The clergyman in attendance said it was a species of madness, and that he was Chaplain to the Institution in Sligo for some time, where he said he had ample opportunity of seeing such cases. In this opinion I did not agree with him, for, from the history of the case, the nature of the fits, his excited manner, the wildness of his appearance, the dread of drink suffocating him, and his being rational on all subjects, as well as retaining consciousness after the fit, I considered there could be no mistake about the nature of the complaint. The poor boy died that night. After one of the fits, he lay down and expired, although a person not acquainted with the disease would suppose he had strength to last for some days. He lived only six days from the first symptoms, and about three days from the time he became excited—the usual course of hydrophobia. During the whole period of the attack he showed no enmity to any one, nor did he offer any one violence, and even used to speak affectionately with his friends between the fits and before his death.

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*Contributions to the Pathology of Diabetes Mellitus.*

By RUD. LEUBUSCHER.

THE following case, observed in my clinique at Jena, presents many points of interest, both on account of the opportunity it afforded for continuing a series of experiments during several months while the



general health was good, and of the results of the post-mortem examination:—

Anna Stein, a girl aged 19, from Gerstungen, was admitted on the 16th of May, 1858. I have within three years had four cases of diabetes under my observation, and the clinical books of the three preceding years record three others, in which the patients all belonged to the female sex, while other physicians still adhere to the opinion that diabetes is chiefly a disease of the male sex. My present patient, a girl of slight development, and still childish form, whose intellectual endowments are of a low order, states that she has for many years suffered from feelings of weariness and great thirst, without being able to remember any preceding more serious illness. Her occupation was tending geese, in which she was frequently exposed to cold.

Examination, on her admission, exhibited a very dry, parchment-like skin, a narrow chest, a dull sound on percussion in the right subclavicular region, puerile respiration in the apex of each lung, hepatic dulness, commencing at the fifth rib, but reaching only to the inferior edge of the false ribs; the left lobe of the liver filled the epigastric region. Great languor and drowsiness, intense thirst, and great appetite, with regular normal action of the bowels.

The quantity of urine, which was of light yellow colour, and neutral reaction, amounted, on an average, to between seven and eight thousand cubic centimètres in twenty-four hours; its specific gravity was 1·030, 1·035–39–44; the quantity of sugar amounted, on an average, to 2 per cent., but also reached 10, and even 12 and 14 per cent.; the proportion of chloride of sodium varied from 0·18 to 0·41 per cent.; that of urea from 0·4 to 1·6 per cent.

Dr. Passauer, at my request, subjected the patient to a series of experiments, to ascertain the effect of different aliments upon the excretion of sugar, urea, and chloride of sodium. These investigations were conducted with the necessary precautions (examination of the urine at different periods of the day, seclusion of the patient, weighing of the food and drink given), and have been, in part, communicated in Dr. Passauer's inaugural dissertation (Berlin). Subsequently the influence of different medicines on the amount of sugar, urea, and common salt excreted, has been studied by another of my pupils, Herr Koch.

I shall, on the present occasion, merely give a brief and comprehensive view of the results of all the experiments.

1. The temperature of the skin was, during the entire period of the patient's stay in hospital, below the normal standard, being generally only 95° F., and, even under the influence of an acute affection, which finally proved fatal, it did not exceed 96° F. The difference in the nature of the food appeared to have less effect on the variations of bodily temperature than the existing temperature of the room.

2. The amount of urine excreted does not correspond to the quantity of drink ingested, but exceeds it many times. This was

particularly striking one day, when six ounces of red wine, three ounces of rectified spirit, and 1000 cubic centimètres of water, were taken, the quantity of urine amounted to only 3300 cubic centimètres—less than usual. But the desire of patients to deceive in general renders this circumstance uncertain.

3. When the food is mixed, and abounds in starchy matter, water being at the same time freely taken, the quantity of chloride of sodium and of urea excreted in twenty-four hours considerably exceeds the normal proportion. Great amount of sugar.

4. A predominance of meat increases the quantity of urea, and diminishes that of sugar, without essentially influencing the amount of common salt.

5. The free use of milk with mixed diet does not produce any change in the quantities of sugar, chloride of sodium, and urea excreted.

6. The ingestion of alcoholic drinks, with predominant protein-food, considerably increases the excretion of sugar; the quantity of urea is diminished; the proportion of chloride of sodium undergoes no change. Dr. Rosenstein<sup>a</sup> has obtained a similar result, but states that he observed that the excretion of sugar becomes relatively less in proportion as the amount of alcohol in the wine increases. In my case the increase of the sugar is the more valuable, on account of the simultaneous administration of nitrogenized food, which usually has the effect of diminishing the quantity of sugar.

In all such experiments a great difficulty exists, which unfortunately cannot be avoided, although it may sometimes have a disturbing influence on the results obtained: I allude to the restraint which it is necessary to exercise over the patients, and which has a tendency to excite uneducated persons to opposition, deception, and evasion of the physician's directions, and in the most favourable case produces in the patient a state of physical tension and excitement, which may easily modify the metamorphosis of tissue.

A second series of experiments was undertaken to ascertain the influence of various medicines. The patient got mixed diet, with plenty of meat, about a pint and a half of good brown beer, but was no longer confined; therefore the quantity of drink taken could not be ascertained with perfect certainty.

The following were the results:—

7. Iron given in the form of lactate, in doses at first of four, and subsequently of six grains, from the middle of November to the middle of December, afforded a mean quantity of sugar, the urea and chloride of sodium remaining the same, and the patient continuing in general good health.

8. Pepsin, in doses of ten grains twice a day, from the middle of December to the beginning of January. The quantity of urine excreted was less, its specific gravity was higher, reaching to 1.044; all the constituents, sugar, urea, and common salt, were both rela-

<sup>a</sup> Virchow's Archiv, Bd. xiii. p. 479.

tively and absolutely increased. The general health was, at the same time, uninterruptedly good.

9. Benzoin, given in daily doses of about six or eight grains, as benzoic acid, benzoate of ammonia, and benzoate of soda, from the middle of January to the middle of February, had no decided effect on the excretion of chloride of sodium and urea; the amount of sugar continued moderate. The principal object, however, in giving the benzoic acid, was to trace its change into hippuric acid. For, as the investigations of Kühne and Hallwachs have established that the formation of hippuric acid takes place in the liver, in consequence of the combination of benzoic acid with the glucin of the glyco-cholic acid, its possible non-occurrence might fairly be taken (although Liebig and Lehmann have found hippuric acid in the urine of diabetic patients, to whom no benzoin had been given), as a proof of a deficient formation of glucin in the liver. The experiments, which were continued in the chemical laboratory by Professor Ludwig, certainly led to the discovery neither of benzoic nor of hippuric acid; but this probably depended on the unsatisfactory methods employed; it had been neglected to neutralize the urine during the evaporation. When, on a subsequent occasion, in another diabetic patient, the urine, during evaporation, was accurately neutralized with milk of lime, then treated with hydrochloric or oxalic acid, repeatedly agitated with ether and spirits of wine, and the residuum, after spontaneous evaporation, covered with boiling water (Hoppe's method), the most distinct crystals of hippuric acid were obtained in repeated experiments, whence it is to be inferred that in diabetes the metamorphosis of benzoic into hippuric acid takes place, as well as under normal conditions.

The general state of the patient during all these experiments, which were continued to the end of March, was satisfactory; the only temporary interruption to health was caused by a furuncle on the nates. The abscess, when opened, contained normal pus, and the blood, which escaped on the incision, was apparently normal. But at the end of March, the patient having suffered violent mental emotions, and having, on the 29th, been exposed to severe cold, was, in the course of the following night, seized with shivering, and vomited once. She complained of severe headach and oppression. A mustard poultice gave only temporary relief. Next morning the skin was cool,  $96^{\circ}4$  Fah., dry; the tongue was dry, and coated with a yellowish fur; the pulse was small, hard, 132; the respirations were 36. In the chest the same phenomena were found as before; posteriorly on both sides, there was dulness from the eighth rib downwards, and indistinct respiration. Above the spine of the right scapula there was bronchial respiration. There was no cough or expectoration. The abdomen was tender on pressure, and was tympanitic. The bowels were torpid. Infusion of rhamnus was given, which produced a pappy motion. The quantity of urine on the 30th of March amounted, in twenty-four hours, to only 3020 cubic centimètres; its specific gravity was 1.020; it contained 3.366

per cent. of sugar; 0·300 per cent. of chloride of sodium; 1·700 per cent. of urea; together with a large amount of albumen, demonstrable both by heat and nitric acid. Infusion of digitalis, made with a scruple of the leaves to four ounces of water, with laurel water; cold applications to the head.

On the 31st of March her head was better; the thoracic physical phenomena were the same. The pulse was very frequent, very small; the respirations were 36, and laboured; the skin was cool, its temperature being about 96° Fah., and was very dry. About a third of the infusion of digitalis had been taken; it was discontinued as vomiting occurred repeatedly in the course of the day; the patient was drowsy. An enema produced a copious, soft evacuation; the abdomen was softer. General sponging with tepid vinegar, internally hydrochloric acid in gruel; after this, too, the patient vomited a chocolate-coloured fluid, on which account the medicine was omitted. Increasing collapse; greater drowsiness on the 1st of April. Death during the night. The urine, which, during the last thirty-six hours, could be only imperfectly collected, again exhibited a large quantity of albumen; its specific gravity was 1·020; it contained 4·06 per cent. of sugar; 0·180 per cent. of chloride of sodium; 1·200 per cent. of urea.

The symptoms under which death took place were chiefly indicative of poisoning; as in other dyscratic conditions the theory suggested itself, that under the favouring influence of an acute local affection (in this instance increase of the pulmonary disease), a metamorphosis specially hostile to the nervous system had occurred in the blood. The rapid increase of the pulse, and its enormous frequency, were striking; which, combined with the diminished temperature of the skin, seemed to point to exalted activity in the domain of the sympathetic respiratory nervous system, with paralysis of the cerebro-spinal, if it is allowed to make such an application in a given case. Other observers (Lomnitz, Rosenstein) have stated, on the contrary, that in intercurrent acute diseases of diabetic patients, the temperature of the body attains much higher degrees than in non-diabetics, while, under ordinary circumstances, it sank, with these authors too, below the normal standard.

The occurrence of vomiting, and the subsequent drowsiness, likewise indicated poisoning, in consequence of a decomposing process in the blood. This assumption was supported by the nature of the urine; and the important change in its constituents during the last few days—namely, its comparatively low specific gravity, the increased quantity of albumen, and the striking diminution of the sugar and augmentation of the urea. Had the formation of sugar been so moderated, or was it merely the excretion of that principle which was diminished, and had the non-excreted portion undergone other metamorphoses? How, then, was the increased amount of urea to be explained, and might the excretion of albumen be considered as the result of renal disease?

The dissection, performed twelve hours after death, certainly re-



vealed important changes and sufficient causes of death, but contributed in only a very limited degree to answer the questions I have proposed. I shall now detail the most important results of the autopsy.

The entire body was still tolerably fat. On opening the skull an emulsion-like fluid, containing red blood-coagula, flowed from the divided vessels, particularly from the longitudinal sinus. On the surface of the brain the large veins, particularly over the right hemisphere, were highly congested, but allowed a whitish fluid to be apparent through them. With this the small vessels were almost wholly filled. While on the left side, the membranes of the brain were easily separated, being raised by a small quantity of fluid exudation, on the right they were more firmly adherent, and the cortical portion of the cerebrum was superficially softened. The substance of the brain, on the whole, was firm, the ventricles and the cavity of the spinal cord were almost devoid of serum. In other respects the brain was healthy. The pericardium contained a small quantity of serum; the heart was small, flabby; still, the left ventricle was slightly hypertrophied; in the cavities, particularly of the right side, was a light red, frothy, sanguineous fluid, with milky and soft coagula, presenting a granular surface. In the apex of the right lung was a tuberculous excavation, of the size of a walnut, surrounded with small firm and soft depositions; the postero-inferior portion of the lung, on both the right and left side, was in a state of flaccid hepatization, with œdema, and emphysematous margins. The abdominal integuments, and the omentum, were tolerably rich in fat. The left lobe of the liver extended into the left hypochondrium; it was 7 inches broad,  $1\frac{3}{4}$  thick,  $8\frac{3}{4}$  in length; the right was convex in the centre, sharp at the edge; it was 7 inches in breadth, 6 in length, and 3 in thickness. The whole liver weighed four pounds. Its substance was pale; only the larger vessels yielded light-coloured very fluid blood. In the hepatic parenchyma were many insulated portions, marked with a yellowish white colour, and infiltrated with fat. Fluid, dark green bile. The mucous membrane of the stomach, as well as of the greater portion of the small intestine to near the ilio-cæcal valve, was highly hyperemic, studded with capillary extravasations of blood, and covered with a thick mucous coating; after the latter was washed off, the villi of the small intestine appeared much swollen, even to the naked eye; the entire surface seemed as if it were sprinkled with fine flour; the microscope exhibited the villi densely charged with finely granular fat. The mesenteric glands were somewhat enlarged, presented whitish infiltration, but were not essentially altered; the microscope exhibited much fat. The spleen was very small and flabby. The kidneys were enlarged, firm, deficient in blood; the pelves were somewhat dilated.

More accurate examination of the blood exhibited, under the microscope, a large quantity of free fat and white blood-corpuscles. After the coagulable portions were separated by boiling, the pre-

sence of a considerable quantity of sugar was demonstrated in the filtered fluid, both by Trommer's test, and by fermentation. In like manner, the existence of urea was demonstrable in a portion from which the sulphuric and phosphoric acids were previously removed by means of barytes, by precipitation with a solution of nitrate of mercury, and in another evaporated portion the characteristic crystals of nitrate of urea appeared on the addition of nitric acid. Some of the white bloody fluid, which stood in a test-glass above the red portion, on being agitated with ether, was almost completely dissolved. After the evaporation of the ether, cholesterolin, margarin, and leucin remained behind. In the decolorized blood, which had an alkaline reaction, free ammonia was not demonstrable. The filtrate of the expressed hepatic fluid contained much sugar.

The foregoing case coincides remarkably with the instances already repeatedly observed, of the existence of milky blood in diabetes, and where, by some unknown process, the metamorphosis of fat, as also of sugar, is impeded\*. Death took place under the simultaneous increase of the pulmonary affection, and accession of gastritis and enteritis; and it is probable that these two processes, especially the first, the disturbance of respiration, which, at the same time, attacked both lungs, materially promoted and augmented the alteration of the blood. It is probable that the important change in the mass of the blood did not occur until the recent attack, as the opening of an abscess some months previously exhibited no external sign of any particular alteration of the blood; it would have struck us, if it had attained so high a degree as we found on the post-mortem examination; the patient, too, had always felt very well up to the date of her last illness.

But if the changes in the lungs and intestinal mucous membrane found on dissection, promoted the metamorphosis of the blood, they certainly were not its sole cause, but the violent mental emotion and exposure to cold were quite competent to have, of themselves, established the process; indeed, proportionably slight causes are sufficient in dyscratic conditions to produce the most extensive decompositions in the vital fluid.

The nature of the blood also satisfactorily explains the decrease of temperature of the skin and the phenomena of somnolence, under which the patient sank, for the obstruction of the capillaries with fat must have constituted an impediment to the circulation, and to the metamorphosis of tissue. But it must be acknowledged that it is not easy to explain the change of the urine with respect to the albumen and the amount of urea, in reference to which we can form only uncertain conjectures.—*Virchow's Archiv*, Band xviii., Heft 1 and 2, page 119.

\* Compare Virchow, "Gesammelte Abhandlungen," page 140.

*On the Employment of Chloride of Zinc in Diseases of the Skin.* By  
Dr. VEIEL, Aulic Councillor, of Canstatt.

SINCE Hanke in 1841 directed attention to the properties of chloride of zinc, I used it in my hospital, as a caustic, in cases where it was desirable to destroy morbid growths in the connective tissue, or to remove abnormal deposits, as frequently occurs in various forms of lupus. For a long time I employed it only in the treatment of lupus and of allied diseases, as *lepra vulgaris*, elephantiasis, small circumscribed scirrhusities, &c.; it was not until lately that I made use of it for modifying the vitality of pus-secreting surfaces in ulcers on the feet of long standing, in chronic eczema, in sycosis, or for the destruction of funguses, as in *pityriasis versicolor*, favus, &c.

In the Institution the chloride is employed in three forms: the spirituous solution, the watery solution, and in the solid state as pencils or cylinders. The first consists of equal parts of rectified spirit and chloride of zinc; the second of ten parts of chloride, ten of hydrochloric acid, and 500 of water; the third is prepared by fusing the chloride and pouring it into moulds, as in the preparation of caustic potash. I designate these three forms: *spiritus*, *liquor*, and *lapis zinci chlorati*.

The lapis I select when the object is to penetrate to the greatest possible depth for the destruction of hypertrophic deposits, as frequently occurs in inveterate cases of hypertrophic and tuberculous lupus, in which the agent is employed precisely in the mode recommended by Langenbeck in the use of caustic potash.

I made use of the lapis in my hospital with the best possible result in thirteen exquisite cases of hypertrophic lupus, six times on the upper lip, four times on the cheek, twice on the ear, and once on the ala nasi.

The following is the mode of proceeding:—Where scabs or thick scales are present, which have already destroyed the epidermis, cataplasms are employed for their removal; but where the epidermis is still intact, it is separated by blistering plaster or water of caustic ammonia. The lapis, placed in a quill, and pointed<sup>a</sup>, is now worked into the hypertrophic or tuberculous tissue, to a distance of about two or three lines, until, when the surface is large, the pencil has penetrated all the excrescences in various directions. Immediately after this operation, in which the pencil sometimes penetrates with remarkable ease to a considerable depth, but at others enters with difficulty, and only superficially, there flows from the honeycomb perforated surface at one time dark, at another light-coloured blood (which is removed by means of a sponge), and soon after a clearer serum, which, in the course of a few hours, hardens to a smooth and firmly-adherent scab. This, partly in consequence of the swelling of the surrounding tissues, partly in consequence of the loss of

<sup>a</sup> As the chloride of zinc in the solid form is extremely deliquescent, it must be kept for use in a well-closed glass vessel.

substance, already presents a rather depressed appearance. On the third or fourth day thin pus forms at the margin of the scab, and is removed by acupuncture, which generally greatly diminishes the tension. On from the sixth to the eighth day, the scab loosens at the edges, whereupon it is completely removed by means of poultices, which are to be continued for several days. The application of the lapis to the tubercles and ridge-like striæ is now repeated, especially in the more prominent parts, until the hypertrophic tissues are destroyed, proceeding as at the first. It is, in general, seldom necessary to apply the lapis more than three times; it was only in one case of an hypertrophic cheek, which was destroyed from the eyelid to the edge of the jaw, and in the latter place was, in its entire breadth, almost as thick as the finger, that I was obliged to use it much more frequently. When the great wound is at length free from all puffy elevations, and has been brought down to a level with the surrounding healthy parts, it is poulticed for several days, lightly smeared every three or four days with spiritus zinc. chlor.; and, subsequently, when the edges have begun to contract, with the liquor, until a perfect cure is obtained, which seldom requires more than three or four months.

In lupus exfoliatus and exulcerans, without hypertrophic infiltrations, the use of the spirit continued to the complete destruction of the fully, or half-developed, or already softened tubercles is sufficient, after which the liquor is likewise employed until the cure is effected. In this case the morbid surface, deprived of its epidermis by a blister, is lightly touched with a pencil dipped in the spirit. This application is attended with violent pain and profuse secretion of albuminous serum, which partly flows off and partly combines with the zinc to form an eschar of albuminate of zinc. The eschar is at first firmly adherent, but after three or four days it separates, with profuse secretion of watery pus. The interval between the first and second cauterization is shorter with the spirit than with the lapis, about three or four days; in this instance, too, the separation of the eschar by the suppuration must determine the time for further cauterization. As to the liquor, which is intended only to hasten the process of healing, it will be sufficient to use it every five or six days.

The lupus superficialis seu erythematocus of Cazenave and Hebra—I should like to call it the red, shagreen-like lupus of the face—requires for its treatment the spirit diluted with the liquor, as in it much more superficial layers of the integuments are affected, and the subcutaneous areolar tissue is rarely implicated.

Hence the indication for the employment of the three forms of the chloride of zinc is evident: the lapis is to be used wherever hypertrophic tissues are to be removed; the spirit where the object is to destroy morbid subcutaneous tissues and degenerated and more superficial layers of integument; the liquor, where it is desirable to promote the cure by means of an astringent and stimulating application, and to secure the formation of a firm cicatrix.



Besides lupus, chloride of zinc is consequently useful in a great number of cutaneous diseases, which I shall now briefly mention.

In obstinate eczema occurring at the boundary between mucous membrane and cuticle, as on the eyelids, the lips, the labia pudendi, the anus, smearing with the spirit is highly serviceable. In the case of the eyelids, the hairs or ciliae must first be removed. Here one cauterization was usually sufficient; while on the mouth and labia pudendi it must be repeated. When the delicate scab was separated, the eczema is generally cured. In eczema solare and impetiginoides daily smearing with the liquor is often the only mode when all other means have failed, of effecting a cure. In eczema of the tongue, too, gaping fissures of the nipples and scrotum, of the palms of the hands and points of the fingers (tylosis), the quick of the nails, &c., the mixture of the spirit with the liquor, in the proportion of one part to ten, has often alone effected a cure, particularly in the quick of the nail, which often forms an unconquerable source of vesicular eruptions. This mixture has also done good service in warty erosions of the tonsils and back of the pharynx, where daily pencillings are necessary.

In psoriasis some remains after treatment with tar, which often continue as large as peas on the elbows, back, or upper part of the thigh, are particularly easy destroyed with the spirit, the scabs being first scraped off with a knife. There is also a palmar psoriasis attended with painful corn-like thickenings, which yield to no other remedy but the lapis, after they have been raised out of their bed by means of a blister.

In sycosis and favus the liquor is very useful, after the hairs of the beard, or head, have been removed. In these affections it acts partly by resolving the swelling and infiltration of the follicle, and partly, as in favus, by arresting the formation of fungi. The same is true of some forms of acne; I also employ with good effect, after the resolution of the tubercles, the combination of sulphur with alcohol, recommended by Hebra.

A great number of warty, circumscribed scirrhusities of the nose, cheek, and lips have been very successfully destroyed with the spirit.

In chronic ulcers of the feet, especially when they have callous edges and a false membrane at the bottom, which has become an independent secreting surface; the destruction of this membrane by the spirit is of great use, particularly when the callous edges are at the same time removed by the knife.

In cysts, too, glandular swellings which are constantly suppurating, and fistulous passages, only one or two applications of the spirit are required to destroy the secreting membrane.

In syphilitic secondary ulcers (syphilides ulcerosa) the mildest treatment is certainly the best, and caustics are not applicable; but in condylomata, in soft warts, mollusca, the cauterization of the roots, after the protuberances have been removed with the knife, is of great value. The employment of the liquor was also successful in sebarrhœa, burns, and chilblains.

It now remains for me to point out the advantages presented by chloride of zinc in the treatment of cutaneous diseases, as contrasted with some other caustics in use.

Its principal advantages consist in—

1. That it enters into combination with all elements with which it comes in contact, especially with protein and albuminous matters, while the compounds so formed in their turn produce a penetrating, cauterizing irritation, whereby the parts in the neighbourhood of the eschar contract, diminishing the wound and approximating the edges of the sound part.

2. That this irritation produces a more rapid formation of pus and separation of the eschar, causing the healing process to proceed much more quickly, the surfaces of the wound to form more rapidly, and to exhibit better granulations.

3. That the cicatrization is better, in consequence of the peculiar contraction and uniform destruction of the parts.

4. That the pain, though considerable, lasts only a proportionably short time, and can, consequently, be very much moderated by the use of chloroform.

In these qualities the chloride of zinc excels,

- a.* The acids, which produce rather a coagulation of the albuminous matters, and form a leathery eschar, which does not penetrate very deeply, and separates only slowly and with difficulty, while the shrivelling of the capillary vessels has a weakening effect on the healing process.

- b.* Caustic potash, which produces a saponification of the soft parts, incapable of being accurately limited, readily corroding the neighbouring tissues by the secretions to which it gives rise, and likewise creating eschars difficult of separation, which leave neither healthy suppuration nor vigorous granulations.

- c.* Lapis infernalis, which acts much more superficially, and produces more tedious separation of the destroyed parts, thus giving rise to more persistent pain and less perfect cicatrices.

- d.* The preparations of iodine (Richter's iodide of glycerin and the preparations of iodide of mercury) likewise penetrate more slowly, create greater reaction of the healthy surrounding parts, are, consequently, also more painful, and, on account of the greater or less amount of iodine they contain, are more uncertain.

With chloride of gold, chloride of bromine, Landolfi's paste, Petrequin's caustic solution of gold in aqua regia, &c., I have made no comparative experiments; nor have I made more use of the pulvis cosmi, or the other preparations of arsenic, which I have avoided on account of their danger and uncertainty, so long as I found the chloride of zinc to satisfactorily replace the other caustics.

I close this short paper with an expression of my wish that chloride of zinc may occupy the same important place in the treatment of cutaneous diseases, that I and others procured twenty-five years ago for green or Dutch soap, as an indispensable agent in the cure of these affections.—*Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien*, 20 Feb., 1860, page 113.

*On the Diseases of Printers.* By DR. VAN HOLSBECK.

DR. VAN HOLSBECK having enumerated the diseases resulting from overwork, from intemperance, want of cleanliness, vicious habits, protracted watching, &c., proceeds to speak of the morbid affections more specially belonging to the printer's art. Fissures of the lips, of varying depths, are of frequent occurrence; at other times tumours are developed on the inner surface of the same parts, which are nothing else than follicles whose excretory ducts are closed. These tumours sometimes inflame, become highly painful, rapidly ulcerate, and assume a cancerous appearance. Such affections of the lips are owing to the habit some compositors have of putting into their mouth the types still moist with the fluid which has served to wash them. Dyspepsia is frequent, as is diarrhœa; the latter is, however, of a transitory and mild nature. Among the most common affections are those of the respiratory passages, of which laryngitis and bronchitis are the principal; pleuritis is rare; pleuropneumonia is frequent and severe. These diseases are favoured by the curved position which the printers are obliged to maintain during their work, particularly when they correct on the forms, and still more by the night-work, by gas-light, by the dust and emanations in places often confined and badly ventilated. Nearly twenty-five per cent. of printers die of tuberculosis, either hereditary or acquired. Diseases of the heart prevail among the pressmen; hemorrhoids are rare; varices and varicose ulcers are of frequent occurrence; the compositors who correct on the form frequently suffer from cerebral congestions and hemorrhage. Among nervous diseases we observe tremor of the hands, against which the author successfully employs the electric current. Saturnine colic and paralysis are rarer than formerly, an improvement due principally to the difference in the composition of the materials of which the type is made, to the precaution of cleaning it from dust, as well as frequently rubbing the boxes which contain it: lastly, to the care of the workmen, who no longer put the letters in their mouth. Hernia is common, particularly among the pressmen; in them we occasionally observe distortion of the joints of the fingers. Fissures and callosities form on the thumb and index finger of the right hand, on account of the roughness of the characters, particularly if they are new and damp with the matters with which they are polished; moreover, in consequence of the habits the printers have of washing themselves with alkaline water or bad soap. Amblyopia and myopia, so very prevalent among typographers, terminate the sketch drawn by the author of the diseases of this interesting class of artisans, with whom we are in daily contact, and whose intelligence and diligence we have constant reason to admire.—*Lo Sperimentale*, December, 1859, p. 560.

*On the Resorption of Pleuritic Exudations.* By PROFESSOR SKODA.

THE resorption of pleuritic exudations frequently takes place very slowly, because the capillary vessels in the sub-pleural connective tissue are obliterated. This may be the result of shrivelling and disappearance of the connective tissue newly formed from the exudation, as then, in consequence of the arrest of the metamorphosis of tissue between the blood and the exudation, endosmose and exosmose cannot duly take place. It is not until after the lapse of months or years, when the fluid portion of the exudation has penetrated through the false membranes investing the pleura, that its resorption occurs. In the first case, internal medicines can, of course, avail nothing, as in them we possess no means of exciting the re-formation of vessels. What has been said explains the action of iodine injected in exudations, inasmuch as, by exciting inflammation, it causes the development of new vessels, and so induces the resorption of the effusion. But this view does not, perhaps, encourage us to the frequent employment of thoracentesis and subsequent injection of iodine; for this proceeding is by no means so safe as the corresponding operation for hydrocele. But, apart from that consideration, the injection of iodine or nitrate of silver into the pleural sac can answer no useful purpose; as, on the one hand, in consequence of the presence of the albuminous exudation, the caustic influence of these agents cannot reach the pleural sac, particularly as by the chemical combination which these substances form with the effusion, their power is altered and exhausted, so that the fluid must in the first instance be pumped out, which violent and sudden evacuation may be attended with evil consequences. But, on the other hand, in effusions of long standing, which have already attained to partial organization and shrivelling of the product of inflammation, the injection will be inefficacious, because the lung can now no longer fill the space previously occupied by the fluid exudation, especially as the investing false membranes must first be broken up by the lungs, which is not conceivable. But even if this should take place, a sudden evacuation could be followed by no favourable result, because necessarily there must be ruptures of the pleuritic adhesions and bursting of the compressed pulmonary parenchyma. Therefore, in a pleuritic effusion of long standing, it is only exceptionally that puncture is admissible, when the exudation is so considerable as to depress the diaphragm, to displace the mediastinum, and so to compress the lung that danger of suffocation supervenes. But how can the resorption of pleuritic exudations be induced? Experience shows that all those means which lower the pressure of the blood or augment the secretions, and therefore promote the separation of water from the blood, effect a diminution of the fluid effusion. Accordingly, venesections and diuretics may be indicated in cases of effusion; but these effects also occur spontaneously. In chronic exudations, which are already organized, such means will even be rather injurious, and the indication will be to



employ remedies capable of dissolving solid exudations. Such remedies are iodine and mercury. The cautious employment of these means may therefore be adopted, and they are particularly suitable for external application. Professor Skoda has for some years employed these means experimentally, and has often seen pleuritic exudations rapidly diminish after the use of mercurial ointment, iodine ointments, iodide of glycerin, and black oxide of copper in the form of ointment. It is self-evident that in all chronic pleuritic effusions the diet must be good, in order as much as possible to counteract their injurious effects upon the system at large.—*Vierteljahrsschrift für die praktische Heilkunde*, 1860, Band lxx. *Analekten*, p. 53.

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*A Contribution to the Chemistry of the Suprarenal Capsules<sup>a</sup>.*  
By Dr. SELIGSOHN.

THE following experiments were undertaken in the Laboratory of the Pathological Institute, at Berlin, with a view to establish the discovery by Vulpian and Cloëz (*Comptes Rendus*, September, 1857, p. 340), of taurocholic and hippuric acids in the suprarenal capsules. The method pointed out by these observers was adopted in my investigations.

A pound of the suprarenal capsules of the ox, having been carefully cleaned and comminuted, was macerated for several days with diluted alcohol, after which the alcoholic solution was filtered and evaporated. The addition of water to the completely evaporated mass caused the separation of fatty matters. The watery solution was evaporated to the consistence of a syrup, and absolute alcohol was added. The residuum thus obtained was dissolved in water to be tested for leucin; the precipitate produced in the red-coloured solution, by the addition of basic acetate of lead, was separated by filtration, and the excess of lead in the filtrate was removed by sulphuretted hydrogen. In the fluid freed by filtration from sulphuret of lead, and evaporated to the consistence of a syrup, only cubic crystals (Na Cl) were observed on microscopic examination, but no leucin was discovered. The alcoholic solution filtered from the supposed residuum of leucin was evaporated to the consistence of a thick brown syrup, which, when dissolved in water, manifested an acid reaction. This solution, mixed with an excess of hydrated oxide of lead (to the removal of the acid reaction), was anew evaporated to dryness; the dry mass was then boiled with 65 per cent. of alcohol. From the warm, filtered alcoholic solution, which was of a dark brown colour, the excess of lead was removed by means of sulphuretted hydrogen. From the yellow fluid separated by filtration from the sulphuret of lead, crystals were deposited after long repose in the cold, which exhibited the following

<sup>a</sup> Extract from an inaugural dissertation: "De pigmentis pathologicis ac morbo Addisoni adjecta chemia glandularum suprarenalium." Berolini: 1858.

behaviour towards reagents. They dissolved readily in ether, and, on evaporation of the menstruum, separated partly in the form of fine needles, partly as scales. They dissolved with difficulty in cold water, which, however, exhibited a distinctly acid reaction. Under the microscope the crystals presented the form of fissured rhomboidal tables; some of them having been warmed in a test-glass with concentrated hydrochloric acid, the crystalline coating which formed on the sides of the glass exhibited the same form as the original crystals.

Their microscopical and chemical behaviour, as well as the formation of the sublimate, put it beyond a doubt that crystals of benzoic acid had in this case separated, while the properties of the crystals obtained by Vulpian and Cloëz, by a similar mode of proceeding, agree essentially with those of hippuric acid.

To the fluid separated from the crystals, an excess of powdered chalk was added, to prevent the possibility of decomposition (on evaporation in the water bath before the addition of carbonate of lime, the fluid became turbid, while fumes of sulphuretted hydrogen at the same time escaped), and the former was thereupon evaporated to dryness in the water bath. The dry residuum was strongly warmed with diluted alcohol, the alcoholic filtrate again evaporated, and then heated with concentrated hydrochloric acid, in order to resolve any taurocholic acid, which might have been present, into taurin and choloidinic acid—the crystalline mass thus obtained dissolved with the formation of a residuum apparently agreeing with choloidinic acid; which, however, on the application of Pettenkofer's test, did not exhibit the characteristic coloration. But in the solution the presence of sulphur was clearly demonstrated; moreover, the characteristic crystals of taurin separated on evaporating the solution in the air.

The incinerated constituents of the residuum of the suprarenal capsules obtained after maceration in alcohol, in which no uric acid was discovered, were—

1. Constituents soluble in water:—

Phosphate of Potash.

„ „ Soda.

„ „ Lime.

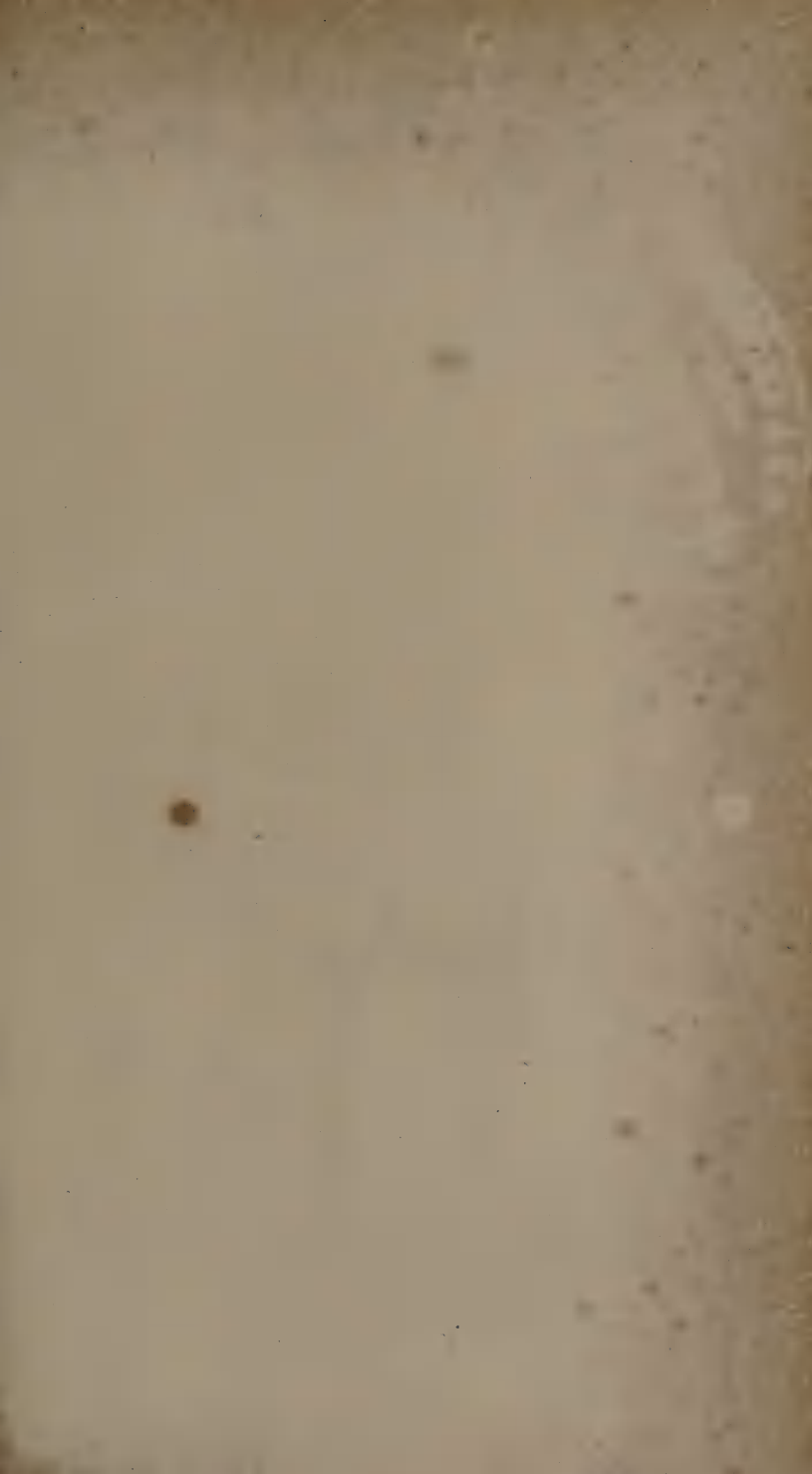
2. Constituents soluble in hydrochloric acid:—

Phosphate of Iron.

„ „ Lime.

„ „ Magnesia.

With reference to the colour-reaction of the suprarenal capsules, I would, in conclusion, observe, that after the application of very dilute hydrochloric acid to their substance, the filtered clear solution assumes a beautiful red colour on the addition of ammonia in excess; after the evaporation of the excess of ammonia the solution becomes again colourless.—*Virchow's Archiv*, Band xviii., 3 and 4 Heft, page 355.





Mr. Butcher on Amputation at the Knee.



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in the event of a bad harvest during the first two years of their residence the government binds itself to supply them with provisions, the value of which is repayable in the same period ~~in~~ the advance of money. Wood and stone for building houses are also supplied without payment.—*Pall-mall Gazette.*

**THE PROPOSED REDUCTIONS IN THE CAVALRY REGIMENTS.**—The reductions ordered in our cavalry regiments, which consisted in the gradual absorption of four cornetries and the adoption of the squadron, instead of the troop integer, are, it is said, found to be impracticable. It ~~was~~ proposed to organise each squadron with its own staff, so as to be able to take the field at the shortest notice and to act independently. The squadrons were to be formed of two troops, which were to be called divisions, and to be commanded by one of the four senior captains, who was to be responsible to his commanding officer for its interior economy, discipline, and drill. The four junior captains were to be division leaders, and as the control and responsibility of their troops would be shifted from them to their four seniors, they would practically be reduced to the level of subalterns. It is now understood that the old system of troops will be reverted to in consequence of the authorities having discovered that the care of the arms and the management of his troop is vested in the junior captain by the terms of her Majesty's commission.—*Post.*

**MURDER BY A MANIAC.**—On Friday evening a murder of a most horrible nature was perpetrated at Glasgow in a house occupied by a dyer, named James M'Bready. It appears that about the commencement of the week M'Bready exhibited symptoms of unsoundness of mind, and

was sent also and some to the

The stock and share markets have all experienced a decidedly improving tendency, prices having established an advance, and business an increase.

The English funds have shown increased buoyancy, and a further rise of one quarter per cent has taken place in Consols, which closed at  $93\frac{1}{2}, \frac{5}{8}$  for money, and  $93\frac{1}{2}, \frac{5}{8}$  for the account. The New Three per Cents and Reduced Annuities are also at enhanced quotations, being  $91\frac{7}{8}, 92\frac{1}{8}$ , respectively. Bank Stock remains firm at 244, 245; and Exchequer Bills are steady at 10s. dis. to par.

Indian securities remained without any material variation, the Ten-and-a-Half per Cent being 210, 213; the Five per Cent,  $114\frac{1}{4}, \frac{3}{4}$ ; the Four per Cent,  $100\frac{5}{8}, \frac{7}{8}$ ; the Debentures, 103, 104; and the Bonds, 5s. dis., 5s. prem.

At a meeting of the new Consolidated Discount Company, held to-day, it was decided to voluntarily wind up the company, and the chairman agreed to take over the assets and carry on the concern as a private firm.

Colonial government securities have continued in moderate request, and generally at steady prices. Canada Six per Cent, 1877-84, brought  $102\frac{1}{4}, \frac{1}{2}$ ; New South Wales Five per Cent, 1888-96,  $99\frac{1}{4}, \frac{1}{2}$ ; Queensland Six per Cent, 1882-5,  $108\frac{1}{2}, 109$ ; and Victoria Six per Cent, 1891, April and October,

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# THE DUBLIN QUARTERLY JOURNAL

OF

## MEDICAL SCIENCE.

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NOVEMBER 1, 1860.

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### PART I. ORIGINAL COMMUNICATIONS.

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ART. VII.—*Reports in Operative Surgery.* By RICHARD G. H. BUTCHER, Esq., M. R. I. A., F. R. C. S. I.; Chairman of the Surgical Court of Examiners, and Examiner on Surgery in the Royal College of Surgeons in Ireland; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery.

#### ON AMPUTATION AT THE KNEE-JOINT—AT THE KNEE—AND EXCISION OF THE KNEE-JOINT.

THE fatality attendant upon amputation of the thigh for years back has awakened a spirit of emulation amongst practical surgeons towards perfecting a better method. The circular, the oval, the various modifications of flap, have each been in vogue, vaunted, and praised, according to the ability and power of the originator, special methods becoming attractive, and adhered to for a time, in proportion to the mental capacity and operative dexterity of the surgeon,—the very abandonment of considerably weighed opinion going far to establish the truth, in which all agree, that amputation of the thigh is perilous in the extreme, stern hospital experience registering the fact, of how long and weary is sometimes the convalescence, the healing of the stump, and how often, too, the completion of the latter the source of much misery and pain.

To many of those dangers consequent upon division of the compact tissue of the bone, pathology has pointed, and by the untiring investigations of Cruveilhier and others, they have been elicited and brought to light. Every museum affords abundant evidence, by irregularly shaped exfoliations, how readily the compact structure of bone perishes after the application of the saw, its periosteum being cut through and ruffled on the outside, sometimes even rudely, and its delicate vascular lining membrane in all instances lacerated and torn within. To no bone in the body do these observations apply with greater force than to the thigh-bone: its compact tissue is thicker, more dense than any other; and, above all, its medullary canal and lining membrane are more developed and extensive. Is it to be wondered at, then, that inflammation aroused in this vascular network should often terminate in suppurative crisis; nay more, in phlebotic complications and death? Professor Syme goes so far as to say: "I believe the thigh-bone would be more fruitful of such exfoliation, if amputation through it were not so fatal;" and then he pronounces the fatality in these words: "The average frequency of deaths is not less than from 50 to 70 per cent., while it cannot be denied that many of the survivors suffer from uneasiness connected with protrusion of the bone." In a paper published by this surgeon in the *Edinburgh Monthly Journal*, May, 1845, he considers these several points in relation to the fatality of amputation of the thigh, and concludes that the point "radically wrong in the principle of the operation is dividing the thigh-bone through its shaft, instead of the condyles or trochanters." The spirit of conservative surgery is abroad throughout the land; and to its powerful influence must be ascribed the restitution of those several operations about the knee, and in reference to which I wish to speak,—amputation at the *knee-joint*—amputation at the *knee*—excision of the *knee-joint*.

*Amputation at the knee-joint*, though bearing its date years and years ago, was performed by Hoin, and with good results, so far back as 1764, and after him by several continental surgeons, with varying success. Velpeau, in particular, has distinguished himself in reference to it, having frequently performed it with success. In America, too, the operation has found great favour: in an interesting paper by Dr. Markoe of New York, published in the *New York Journal of Medicine*, we learn that he has advocated this operation in preference to amputation of the thigh since 1841. He writes, that in this operation the bone is uninjured, while in the other (the operation through the shaft) it is divided with a degree of violence, the effects of



which are not always appreciated. "The effects of this violence both upon the bone and its envelopes, and of the exposure of the cavity of the medullary membrane to the action of air and pus, are seen in several of the accidents which occur after amputation, some of which are merely of sufficient gravity to annoy the patient and prolong the period of his cure, while others are of such danger and severity as materially to endanger life." The exfoliation of the injured bone and the formation of tubular sequestra, the author regards as due to the division of the nutritious arteries of the bone either by the saw or the catlin; the supply of blood to the medullary membrane, thus cut off, is too slowly supplied by anastomosis, and the bone dies. For the purpose of ascertaining the usual point of entrance of the nutritious artery into the bone, Dr. Markoe examined 45 femora; in 23, the foramen was placed at about the junction of the middle and upper third; and in 22, at or near the centre of the bone: in several it was double. Dr. Markoe remarks, phlebitis, "another destructive consequence of such violence, is of much rarer occurrence in the well-regulated hospitals of the United States, than in Europe." From Jaeger's collection of the published cases of amputation at the knee-joint, it appears that, out of thirty-seven, about twenty-two have had a favourable, and fourteen an unfavourable result<sup>a</sup>.

At the Western Medical Society of London, October 23, 1857<sup>b</sup>, Mr. Lane gives the particulars of the case of a child, aged 8, where he performed amputation at the knee-joint, and I believe he is the first surgeon who in England thus operated, leaving the articular surfaces entire. Since then this special operation has been frequently and successfully practised.

We come now to consider the question of *amputation at the knee*. The steps of the operation are similar to that at the knee-joint, save that the articular surfaces of the femur are removed. To Professor Syme, of Edinburgh, is certainly due the credit of first practising this operation, and placing it in a prominent position by his writings, as already referred to; the point, however, of originality in the matter, must be conceded to Malgaigne, for he first suggested it: "If through disease of the knee, you could not have recourse to disarticulation" (writes this practical surgeon), "perhaps you would obtain a similar result by cutting the thigh as near as possible to the condyles, and covering the osseous surface with a large anterior flap. This very simple idea is in accordance with the most useful rule of amputations, viz., to operate as far as possible from the

<sup>a</sup> South's Chelius, vol. ii. p. 943.

<sup>b</sup> See Lancet.

trunk. I can scarcely understand how it has escaped the observation of surgeons to the present day". I believe Mr. Fergusson to have been the first surgeon who performed this operation in England. It was on the 17th of May, 1845, and the patient was a man aged 24 years; the particulars of the case will be found published in the *Lancet*, July 19, of that year.

It is most interesting that in the last edition of his *Practical Surgery*, 1857, he alludes to this case, operated on years before, in these satisfactory terms:—"I have seen this young man repeatedly since, and he was at King's College Hospital a few weeks ago. Without exception, I deem the stump equal to any I have ever made in the thigh. He has repeatedly walked forty miles a day, with a very indifferently made artificial leg, and once accomplished 120 miles in three days, without the slightest damage to the tissues." Since this time Mr. Fergusson and other surgeons have frequently repeated the operation, and with excellent success. I shall now detail the case in which I recently performed this operation, and dwell upon the reasons which made me select it as being peculiarly applicable.

Thomas Kelly, a car-driver, aged 45 years, a scorbutic, broken-down-looking man, admitted to Mercer's Hospital, August 24, 1859. He had suffered for seven years previous to this time with a large, angry ulcer, fully the size of the hand, and occupying more than the middle third of the left leg, on its anterior and lateral boundaries. A more quickly destructive process was set up in its position about a year before, and which he attributed to the effects of intense heat, which occurred in this way. The man was employed at his calling, and exposed to severe wet and cold for several hours. He came home with his limbs benumbed, and sat at a large fire to dry himself, when he fell asleep; on being wakened, it was found that his right leg, the one nearest to the fire, was burned severely, particularly about its centre and fore part; the ulcerated limb suffered likewise, but not to the same degree. Since this accident the ulcer grew gradually deeper, at length seizing on the tibia, and eating steadily and gradually its exposed surface; the consequences of the burn on the sound limb were sufficient of themselves to entail confinement for nearly three months, at the expiration of which time the destroyed surface was cicatrized. During this period the ulcerative process was going on deeper and deeper, wider and more extensive in the bone, until the morning previous to the above date, when, in

\* *Manual of Operative Surgery*, by Malgaigne, translated by Brittan, p. 258.

making an effort to get up and walk, the limb gave way, the rotten bone having broken across; he was then brought to hospital, and on the date above specified. The limb at this time presented a shocking appearance: the leg was hollowed out in the extensive way mentioned, while the sharp, broken spiculæ of the fragments projected in the centre; two considerable pieces were extracted as being already dead and partly detached; the whole was chambered into recesses holding sordid pus, and recent imperfectly formed coagula; the bleeding, I may remark, was neither rapid nor with force; on the contrary, it was quite under control.

A very remarkable feature in this serious case was the total absence of shock. The man suffered from none of those frightful nervous symptoms of convulsed system which so grievously threaten life when compound fracture is produced in a healthy limb, and under ordinary circumstances. No; he gave the history of his case calmly and quietly; there was no perceptible instability of his pulse, or alienation of his mental powers. In other words, his condition was scarcely altered from the enfeebled state to which he had attained before the complication; while the presumptive evidence certainly would have been, that so much additional violence would lead to the extinction of life; but the important practical lesson has been taught otherwise. All things considered, it was desirable that an effort should be made to save the limb: it was put up in a fracture-box, such as I have described when writing of fractures in the vicinity of the ankle-joint<sup>a</sup>. Every requirement essential towards removing muscular action, and maintaining the bones in favourable position, were afforded by this apparatus,—the thigh being slightly bent upon the pelvis, sufficient in degree towards relaxing the muscles of the calf, while the leg lay supported on a horizontal plane; side splints ran into the box, and foot supports, steadying the part effectively, at the same time leaving exposed the broken surface for whatever applications might be considered requisite. Constitutional and local treatment was steadily persevered in for several months, and at one time a hope was entertained that the injured bone might crumble away; and being, according to circumstances, assisted by the gouge and forceps, art did everything to keep the part at rest, to assist a more vital action, a more reparative process by suitable dressings, while all constitutional treatment

<sup>a</sup> See Dublin Quarterly Journal of Medical Science, February, 1852, and continued in the May Number of the same year.

tended towards improving the character of the blood so as to afford more energetic and life-giving properties to mend the part. Nature certainly made the effort at repair,—she improved the condition of the soft parts, she condensed the structures around the broken bone, she effused lymph in its locality, she consolidated it even to that extent that scarcely any motion was permitted at the primitive solution of continuity; but here she stopped, as if incapable of bearing up against so prolonged a struggle. New bone was never formed. Thus exhausted, quickly a more unfavourable condition of parts was steadily produced; months passed on; a consuming fever was evoked. Amputation was proposed on several occasions, as offering a reasonable chance of life, but the man would not assent to the measure. Striking and more apparent every day were the withering marks of hectic stamped upon him. During all this time the local changes passed on from bad to worse,—the large ulcerated gap put on a most malignant aspect; out of it on all sides sprouted firm irregular nodulated masses, characterized by deep and lancinating pain, continuing day and night. Yet neither its secretion nor its structure, examined by the microscope, would confirm such a change being wrought in the part. The odour and fetid discharge were most oppressive and abundant, and really life seemed perilled by the absorption of its poison.

At length the man consented, the last week in February, to have the limb removed, and I determined, for the following reasons, to amputate at the knee.

If the case was one after recent accident, where the integuments were torn and lacerated and killed, and the bones crushed and broken to the same extent as happened in this case by the ravages of unhealthy ulceration, I would not hesitate about making the effort to save the knee-joint, and I would have amputated a little below the tubercle of the tibia. No one will for a moment deny the advantages of saving the knee when practicable; but here I was afraid to attempt any such measure, lest phlebotic inflammation should be set up in the cancellated texture of the diseased bone after its section was completed, and, moreover, I found that already its delicately arranged structure was implicated and spoiled, the integuments over the part being somewhat tender and œdematous. The after examination of the limb, on removal from the body, showed clearly how accurate was this reasoning, for the part of the tibia intervening between the breach in the soft parts and the knee-joint was altogether infiltrated with pus and bloody



serum. There can be no difficulty in surmising what the result of the operation, under such circumstances, would have turned out.

I shall illustrate, by the following case, how different should be the practice after recent injury, and when the bones are healthy.

James M'Cabe, a railway guard, aged 30, was admitted to Mercer's Hospital, at 12 o'clock, P. M., October 28th. As the carriages were coming quickly into the station he endeavoured to cross the line; he lost his presence of mind, remained too long, and then threw himself down, but his right foot and leg lay obliquely along the rail, several of the carriages passed over them, crushing open the ankle-joint, smashing up the foot, breaking into fragments the tibia and fibula beyond their middle thirds, and tearing away the flesh from the fore part and sides of the bones, even somewhat higher up in front; while, in the centre and about the foot, bones, muscles, and tendons were all bruised into shapeless masses. The accident occurred only a few hundred yards from the hospital, and he was brought down in a few minutes. I was sent for and saw him at once. When I came, it was thought he was dead. The collapse was extreme; he had only a feeble wave in the pulse at the wrist; he was cold as death, and clammy sweat pouring out from his forehead and body. The only evidence of life he gave was in maniacal raving. There was no bleeding from the mangled extremity. The most powerful means were put in practice to resuscitate the man. Ammonia constantly applied to the nose, and frictions with it; over the back and extremities heated jars; hot brandy and water enemata, and, as he could not swallow, I slipped a long tube into his stomach, and injected nearly a tumbler of the same fluid. After some time, in about an hour, he began to show signs of life: the pulse to get up; the heart to beat more forcibly; heat to be generated. I now steadied the limb upon a wide splint placed behind, and a few temporary turns of a roller to prevent it being further damaged, now that he was beginning to have returning consciousness, and to experience pain. After about two hours steadily persevering in this way, he was able to speak rationally, and the raving began to subside; the circulation was gently getting up, and now some oozing began from the lacerated parts: the blood soon came quicker, and of a scarlet colour. I placed a pad upon the splint, corresponding to the popliteal artery, so that, when the limb was let down, it made pressure on the vessel; no circular compression being applicable; this for a time controlled the bleeding, but soon it ap-

peared again from several pits or depressions in the broken up parts. Small shreds of lint, steeped in turpentine, and passed in for a few moments exerted some influence, but soon the welling-up would commence in another part. At this time I got an assistant to make pressure on the femoral artery at the groin, while I supported the entire crushed and now quivering mass with a bandage. The compressor used in aneurism I now adjusted so as to take the place of the assistant's hand; and having got the pad well over the artery, just below the pubis, the bleeding seemed quite under control. His cries of pain and agony were becoming now so great, that I gave him a full opiate.

At half-past 3 o'clock, some slight return of the bleeding; the man becoming more conscious, and circulation becoming more developed. At half-past 4 I was again summoned to see him, as the bleeding came on so rapidly that the resident pupil was obliged to place an ordinary tourniquet upon the thigh, which controlled the flow.

Reaction was now fully established, and I determined to remove the limb. So imperative did I consider the measure that I did not conceive it right to wait till morning, but decided on operation at once, by candle-light. The man being now well alive, I made a more minute investigation as to the condition of the shattered upper fragment, so as to regulate my proceedings, I found the bone materially injured to within two inches of the articulation; the ragged flaps into which the integuments were torn in front facilitated this examination. So I determined on saving the joint. The patient, while yet in his bed, was placed under the influence of chloroform, and then gently, and in the recumbent position, lifted and placed upon a table close beside his bed. This was removed a few yards towards the end of the ward, so as to secure the light of two movable lamps constructed for such purposes. I next removed the tourniquet, pressure on the femoral artery at the groin being substituted. Standing on the right side of the patient I laid the heel of a long narrow-bladed knife on the inner edge of the tibia, not more than two inches from the articular surface of the bone, and then brought the knife nearly straight across through the soft parts, as far as the outer edge of the fibula, their injured state not admitting of a more curved sweep. Without lifting the knife, its point entered at the outer angle of the wound, just behind the fibula; the edge of the knife was turned downwards, and transfixion of the calf accomplished close to the posterior surface of the bones; the knife was carried downwards, holding this relation, for about two inches, and then its

edge was turned somewhat outwards, and carried thus down for about an inch, and then with an undulating sweep to the end of the flap, which was fully preserved eight inches long. The first of these manœuvres was executed with the object of making direct section of the artery, and thus avoiding "slicing it;" the second hollowing out the flap, the calf being very large and muscular, so as to permit it to double up nicely, and *without constriction*, a cause which I believe tends frequently to non-union, the flap being deprived of a vigorous supply. The outer flap was freed upwards about a quarter of an inch, and the knife was then swept round the bones, dividing every adherent fibre, and cutting evenly the periosteum. The fine narrow blade of my own saw was then passed as high as the first flap would permit, and the tibia cut at first in a gentle curve, and then directly backwards. together with the fibula. The arteries were next secured, and the flap turned up, which seemed a little over abundant, but it was cut with such an intention, and after a few days showed its just proportions, and was everything that could be desired. The patient was then carried back to his bed, the limb supported on an inclined plane of pillows, and the flap spread out gently yet sustained in a curve, and the part left exposed to glaze.

In a few moments the man became conscious, the chloroform acting most admirably. It is true, that only a few moments elapsed from the time of his being taken from his bed and again placed back in it. But a severe capital operation had been performed, and the creature was quite unconscious of its having been done. And, above all things, *he sustained no shock*. After this I stood beside the man for half an hour, gave him some wine with opium, and he fell into a tranquil sleep. In three hours he awoke, quite conscious, and free from pain. At half-past 1 o'clock P. M. I dressed the stump, removing any little clots with great gentleness. The method I adopted in sustaining the part evidently permitted the large flap to curve readily without pain or spasm. I now placed several points of the interrupted suture, and brought the parts in the intervals accurately into position.

It is unnecessary to follow up the daily reports: the ligatures came away in due time, and the entire flap united nearly by first intention; the stump was worthy of my highest approbation. In six weeks the man was walking upon an artificial leg; and since that period to the present, many, many months, he has been uninterruptedly employed as a guard upon the railway<sup>a</sup>.

<sup>a</sup> The judgment of the surgeon, in all these cases, will be called upon to determine

For the reasons already assigned, then, I did not consider it advisable to amputate, in Kelly's case, through the cancellated structure of the tibia, and I performed the operation through the lower end of the femur, after the following manner:—

February 25, 1860. The man being carried into the operating theatre, he was quickly brought under the influence of chloroform; when so, he was drawn down gently to the edge of the operating table, so that his pelvis rested thereon. The right leg was then secured to the leg of the table, so as to guard against any struggles, and permit me free access to the affected limb. The femoral artery was compressed at the groin by an assistant, and the leg steadily supported by another; standing on the right side of the patient, I drew a long, narrow-bladed amputating knife in a curve way across the forepart of the articulation, the heel of the knife being laid on the outer and back surface of the external condyle, at where I thought its cartilage ceased; it was then carried downwards and outwards across the lower margin of the patella, and corresponding to the insertion of its ligament, and then upwards to the internal condyle, at a point opposite to that where the knife was first placed; the flap was then raised off the patella by a few touches of the point of the knife, and then came directly back at its upper edge, severing the rectus and muscles attached to it, and freely opening the joint in front. So well back were the angles of the wound, and so accurately placed, that transfixion was accomplished with facility, the flat of the knife lying evenly against the bone, as it travelled from within outwards; the leg was then very slightly bent, so as to permit the instrument to slide more readily over the posterior projection of the internal condyle; having passed this point, the leg was again straightened, and the knife kept close to the bones throughout the entire extent of the calf, and then made to cut directly out; the anterior flap was next freed from its synovial lining, and lifted from the sides of the condyles, and in front, just free from the margin of the cartilage of incrustation. The flaps being well held up before and behind, and the limb carefully steadied, I laid the fine blade of my own saw on the healthy osseous tissue close to the

accurately what ought to be done. A few days since a man was admitted into Mercer's Hospital, run down by long-continued disease, incurable, of his ankle-joint and tarsus. The tibia was diseased several inches above the joint, wide, expanded, and with marks of cicatrices over it, where deadened portions of bone had been extruded; so likewise the middle of its shaft was implicated. On the 6th of the present month (September) I amputated by double flap, less than a hand's-breadth below the knee; curved the bone well in the section, held the flaps well together with iron-wire suture, and in a few days the entire, save in the track of the ligatures, was healed by first intention.



cartilage, but not infringing upon it, and then cut the bone in a curved manner from before backwards, thus securing even a longer stump, more of the bone free of cartilage, and exempt from sharp and irritating edges, better in every way for adaptation to the soft parts. *I was the first, I believe, to lay stress upon this method of sawing the bones in certain amputations<sup>a</sup>*; thus the limb was severed; the arteries were then secured—seven in all—and the patient conveyed back to bed; he quickly awoke from the effects of the chloroform, which acted most favourably, the patient not having experienced any pain; he bore the operation well, not having lost, I think, a drachm of arterial blood; the flaps were dealt with, and left to glaze, as in the case just recited; in seven hours I dressed the wound, and it was astonishing how admirably the parts came together; at first it might have been supposed that too much soft parts had been kept, but this proved not to be the case; it will be seen that the same complicated way of forming the posterior flap, as described in the *recent amputation*, was not followed out or necessary here; here the calf was wasted, attenuated from want of exercise, from general emaciation; and here, too, the lower end of the flap was cut straight out, so that, when doubled up, the additional muscular tissue preserved was beautifully covered in by the thin anterior flap; all the surfaces were gently freed from clots; all the surfaces were accurately brought together; the ligatures chiefly being at the posterior angles; several points of the interrupted suture were had recourse to, and some wide straps of adhesive plaster, extending from high up behind the thigh, carried over the face of the stump, and up upon the forepart of the limb, so as to afford a long, gentle traction forwards; the line of juncture secured well in front, and altogether the covering in of the bone was abundant and admirable; pillows were adjusted also to favour this end.

On the 26th, the day after the operation, the pulse had come down from 125 to 100; and in every way the man was greatly benefited by the operation; so quickly did everything go on, so little pain, so free from discharge, that I only removed one or two of the plasters near where the ligatures lay; so little redness or resentment to the presence of the stitches, that I suffered them to remain until the 8th of March, when I cut them all out, union being effected by first intention throughout the whole track of the wound, and the entire flap well up and fixed in its berth; great caution was employed in

<sup>a</sup> See a paper on Amputation, in the Dublin Quarterly Journal of Medical Science, August, 1851.

giving it due support, both by adhesive straps and pillows nicely arranged.

On the 13th of March the smaller ligatures came away, and on the 16th the main ligatures (two in number) came away without a trace of blood; this was at 9 A. M.; however, I was sent for at 6 P. M., as bleeding was reported to have come on; the dressings were all stained with scarlet blood, and a few drops occasionally escaped from beneath and through them; on exposing the inner angle, the blood came up quickly from the track through which the ligature was drawn in the morning; I elevated the stump nearly at right angles with the trunk; put a few evenly adjusted compresses over the face of the stump, and made more forcible pressure upon it by wide adhesive straps brought from behind forwards, and then it was propped by pillows; the pad of the compressor used in aneurism was brought to bear gently on the femoral artery, just after it passed off of the pubes; ordered twenty drops of tincture of opium, and fifteen of digitalis, to lower the action of the heart and throbbing vessels; ice was placed in bladders over the dressings, and along the course of the artery in the thigh; thus the bleeding was arrested. This bleeding was to be attributed to the man suddenly sitting up in the bed, and keeping this posture immediately after I left the ward in the morning. No doubt, the sudden change of position excited the violent emotion of the heart's action towards hastening, propelling onwards the current which broke down the recently glued parts, washed away the as yet not perfected plasma: visited at 9 P. M.; no return of the bleeding; flushing of the face and heat of body gone; he lies in the same position, perfectly horizontal, with the thigh propped up in almost a perpendicular direction; gentle pressure over the femoral artery near the groin, and ice over the dressings; the digitalis and opium to be continued every third hour.

March 17th. Slept quietly; no return whatever of the bleeding; circulation quiet; to continue the opium and digitalis; all drinks cold; milk, a little chicken tea.

18th. No return of bleeding; treatment as on yesterday; parts undisturbed.

20th. No return of the bleeding; so dressed the stump and placed it almost in the horizontal position, slightly raised, and supported at the end; the man complaining very much of the fatigue consequent upon the last day's constraint in the raised posture.

On the morning of the 22nd, at 6 o'clock, I was hastily summoned to see the man, and found him with arterial blood

flowing quickly from the same point as it occurred before, but far more rapidly, and in greater quantity. I elevated the limb again at right angles with the trunk, steadied it effectively in this position, put an aneurism clamp with moderate tightness over the femoral artery, high up, and then removed all dressings off the point through which the blood welled up, and put a small dossil of lint in the little hole, a larger over it, and then another, wider and firmer than the former, and upon this steady finger pressure; this I kept up for half an hour myself, and then had relays of students, who unflinchingly gave me their assistance for nine consecutive hours. During all this time the pressure was never suffered to relax; during all this time the same assiduous care characterized their efforts. The digitalis and opium were given internally in somewhat larger doses; and ice-bladders were laid over all the greater portion of the stump, and along the sides and forepart of the limb; to these combined, continuous, and well devised means, may be ascribed the staunching of the blood, the permanent sealing of the wound, the healing of the part, completed and perfected for ever. After this time no casualty occurred; and in one month after the operation the stump was perfect in every way; at this time I had a photograph taken of the man by a talented young friend, and from which the beautiful lithograph adorning these pages was traced and executed by the eminent engravers of the firm of Forster & Co., of this city; the stump is in every way beautiful in proportions; the flaps which, as before observed, seemed at first too large, now constitute a firm, compact, well-arranged cushion, amply covering the bone and their line of union well in front, and out of the way of pressure or injury. Soon after this I had an artificial leg made, upon which the stump rested firmly, and with which the man could walk about without the slightest pain or inconvenience; the end of the stump rested firmly upon a nice soft cushion, and he did not suffer or complain from jar or pressure. Thus he was going about, when ulceration of a very unhealthy character attacked the cicatrix after the burn on the right leg; it spread rapidly, and assumed a warty character; the entire surface, however, was destroyed, and the part is now just healed, and the poor fellow will be able to get about as well as ever; nothing can be more satisfactory than the state of the stump.

The plan and method of the operation which I have described are, I think, superior for many reasons to amputation at the knee-joint, independent altogether of those cases where the tibia is *extensively diseased*, and where the femur is only in a minor degree affected in its articular surface; but I

think it is preferable in all these cases where the leg is so extensively diseased, necrosed, or shattered by violence, that amputation at the knee-joint would be selected, as it is now, by many. I have no doubt whatever that in all cases the cartilaginous surface of the femur should be removed; according to the curved section I have described, cut in this way, the surface for support is just as extensive, wide, and expanded as when the cartilage is untouched; we find that in many of those cases where it has been retained, unpleasant symptoms have originated from its being attacked by ulceration, and sometimes death. Now, as to the preservation of the condyles to act as a guard to the cicatrix puckered into the hollow behind, a flap being made from the forepart of the limb; even should this security be deemed advisable, it is afforded by my section of the bone being curved a little more; there is no necessity for the risk being incurred of preserving the cartilages, for if the posterior flap be properly formed and brought up nicely in front, the cicatrix will be altogether out of the way of injury; it should not be forgotten, too, that some little difficulty may in certain cases pertain to getting a good covering for the condyles; yet in the hands of a skilful surgeon, this, I think, will not form an objection. The necessity for removing the articular cartilage in amputation at the tibio-tarsal articulation is admitted by all, for the very reason that I urge it in the knee. In the operation at the knee-joint, the patella also should be cut out; it is only in the way if retained, and may demand such a procedure at a later period. However admirable a measure amputation at the knee may be considered, it can never take the place of *excision of the joint*: it would then, indeed, cease to be a conservative measure. It is a source of the greatest gratification to me to see how steadily the later operation is holding its ground, and bearing ample fruit.

Since the publication of my memoirs on excision of the knee-joint, I have been watching with anxious care the results of the operation. The periodicals abound with cases. In the Number of the *Lancet* which has just appeared, while I pen these observations (August 4, 1860), there are nine cases recorded, out of which number one died, a miserable and unpromising case for any operation—"a strumous, delicate man, aged 37." "He had disease of the sternum, co-existing with the ulcerated state of the cartilages of the knee-joint." Evidently the creature was surcharged with scrofula. The remaining cases are reported as most successful in their results, in every instance a limb being secured of seemly proportions, and capable for its several requirements, save flexion. From care-



fully reading over and maturely considering the several reports of cases published within the last few years, I think I am borne out and confirmed in the several practical deductions which I arrived at, antecedent to this time, and which I laid down, as some supposed, in rather a peremptory manner; some of those opinions have been copied in my very words, and, I regret to say, without due acknowledgment.

I cannot conclude these observations in a better way, I conceive, than by again briefly condensing those directions which should guide the surgeon when he contemplates excision of the knee-joint, and advert to those truths which should give him a confidence in success.

The first and most important point to be considered is *the judicious selection of the case*. "In order that excision of the knee-joint may prove successful, it becomes imperative that the cases are carefully selected; by 'successful,' I imply not only the preservation of life, but also the saving of a limb, better than any artificial substitute, no matter how beautifully contrived. It is not applicable, for obvious reasons, where the bones entering into the articulation are very extensively diseased; for though I admit a better chance of preserving life would be secured by excision, even in this case, than by amputation, yet the member would be faulty as a means of progression; it would be short, and a useless appendage. I need scarcely make allusion to organic disease of the viscera as affording an insurmountable objection; but this applies, with equal force, to the non propriety of amputation. In such a condition either operation becomes only justifiable to alleviate excruciating torture. I do not lay much stress upon the integuments being extensively disorganized, or think that such a state militates with any force against excision, for in numerous instances, after removing carious and dead bones, I have been forcibly struck by the remarkable rapidity with which the soft parts set up healthy action and recover themselves; parts undermined and sinuous when relieved from irritation, and set at rest, become very amenable to simple management. It has been objected to, that after resection the discharge is very great, and runs the patient rapidly into hectic. No doubt, the discharge from the divided surfaces is considerable—may be profuse—yet is healthy; it is essential to the process of reparation, and diminishes, day by day, according to judicious management; it is not so with the ichorous discharge created from the morbid action aroused by the presence of diseased and deadened bones, which, acting as the poisoning supply of the constitutional disturbance, seals the doom of the being unless

relieved by operative surgery. It should never be forgotten that resection of the knee-joint is only advocated as a substitute for amputation in certain cases, and not for the simple mode of incising the joint, to which practice Mr. Gay has recently directed the notice of the profession"<sup>a</sup>. Again, the same caution upon the necessity of carefully selecting the cases for excision is insisted upon in my second memoir<sup>b</sup>, and published two years later, February, 1857. "In my former essay I forcibly dwelt upon the *necessity of carefully selecting the cases for excision*, and pointed out the prominent features which should influence the surgeon; but, I believe the caution has not been applied in every instance. I fear the panting after *éclât* has charmed away some from the stern dictates of judgment; yet I trust this may never be the case—infinite mischief is done by such rashness. Not only is the life of the patient jeopardized by an operation which cannot secure a useful limb for the purposes of life, but the operation itself is brought into disrepute, and open to the sarcastic criticism of those who know but little about it." "The applicability of the operation of excision of the knee-joint to cases of recent accident and gunshot wounds will depend upon the extent, and be estimated by *the amount of injury the soft parts*, including the vessels and nerves, have sustained, as well as that inflicted upon the bones. The practical surgeon will be able to compute with accuracy, after careful examination of the parts, how far this method of preservative surgery can be put into practice, and trusted to with hopes of success"<sup>c</sup>.

I shall next consider the best mode of operating. In my first memoir<sup>d</sup> I have mentioned the several ways recommended by Park, Mülder, Moreau, MM. Sanson and Begin, Jaeger, Syme, Fergusson, Jones, and Mackenzie, exception alone being taken to that of Mr. Syme, and in these words<sup>e</sup>:—"Amongst the many modes of incising the soft parts which I have mentioned there is not one to which exception can fairly be taken except that of Mr. Syme. He advises an elliptical piece to be cut from the anterior wall of the joint, included in the arms of the ellipse, the patella. I do not for a moment doubt the propriety of removing the bone when diseased; but I know no condition that can warrant the cutting away of the flaps; if they are in a properly healthy state, they will not be found too great; after a little time, they will adapt themselves by contraction to the altered state of the parts beneath; if they are perforated

<sup>a</sup> First Memoir, February, 1855, page 48.<sup>b</sup> Page 58<sup>c</sup> First Memoir, page 49.<sup>d</sup> Page 50.<sup>e</sup> Page 55.

by sinuses, and present an appearance which by some may be called disease, they will recover themselves after the carious bones are removed, and not be found too extensive, but will constitute an accurate involucrum for the divided osseous surfaces." The mode of proceeding which I consider best is that described in my first memoir, at page 23, in reference to my first case:—"The patient was placed upon a table, lying on his back, and in a few minutes brought under the anæsthetic influence of chloroform. The leg, at extreme of extension, was steadied; the sole of the foot being planted upon the table and held so, forcibly, while the thigh was rigidly fixed by a second assistant. Standing on the left side of the patient, I leant over the knee, steadying its outer side against my chest, and with a strong scalpel cut along the inner side of the joint to about the extent of five inches. This incision was commenced below, at a point about two inches lower than the articulating surface of the tibia, and corresponding to a line a little anterior to its inner sharp edge; the knife was at once thrust down to the bone, and, holding the same relationship, was carried upwards along the femur for three inches; the saphena vein was thus gradually left behind the track of the wound. A similar incision was rapidly made on the outside, commencing below the head of the fibula, and carried upwards above the external condyle; through the entire extent of this, too, the knife was swept along the bones. Both vertical incisions being completed, they were connected with a transverse one, passing an inch above the attachment of the ligamentum patellæ to the tibia; the latter wound opened the joint fully; the lower flap was freed downwards a short way, while that containing the patella was directed upwards, but with some difficulty, owing to the thick, matted cellulo-fibrous tissues which constituted its bulk. The internal and external lateral ligaments were next divided, together with adventitious bands, the result of organized lymph deposits; the anterior crucial ligament was destroyed, but the deeper fibres of the posterior remained intact, and incorporated by dense structure with the posterior ligament of the joint; these, in turn, were divided, but much difficulty was experienced in detaching them from the posterior surfaces of the bones, with due consideration for the popliteal vessels, which not only lay upon the dense elastic material, but were embedded in it. The knife was then rapidly swept round the condyles of the femur, the disease not extending higher. In the same way the articulating end of the tibia was freed from the soft parts around its circumference; the ligamentous structures being thus cut through, the

leg was forcibly flexed, and the ends of the bones thrust forward.

“ And now the accuracy of the diagnosis was fully verified. The femur presented its external condyle nearly all removed by caries, while the internal was not at all so extensively diseased, its posterior half being stripped of its cartilage of incrustation, and carious behind the intervening space; between the condyles was likewise carious: the external condyle of the tibia had its cartilages of incrustation removed, which was replaced by a thick fibrous substitute, while the internal presented its normal appearance (we had here strong evidence of the efforts of nature to check disease); the patella was quite carious, hollowed, and reduced to a complete shell; therefore it was dissected carefully out, the integuments in front and covering it being preserved together with the fibrous attachments implanted at its upper and lower edges. The bones being sufficiently exposed, I next proceeded to cut off their extremities, and for this purpose used the saw, which I prefer for amputations, its blade being turned in the supports and steadied so, it was easily passed behind the condyles of the femur, and made to cut forwards; a few movements were sufficient to complete the section. In a similar way its serrated edge was placed behind the tibia, and urged forwards so as to remove a thin, osseous slice, together with the surface of the bone. The head of the fibula was not diseased; lying below the surface of the tibia, it did not prevent the apposition of the bones; it was therefore left intact for this special reason, as well as that the attachment of the biceps should not be interfered with. The entire amount of bone removed measured two inches.”

There are some points more minutely dwelt upon in the operation in my *second successful case*, published in my *Reports in Operative Surgery*<sup>a</sup>, and which I shall quote. The operation was performed April 15, 1857, on a man aged twenty-seven years.—“ The patient being placed under the influence of chloroform, I adopted the H incision, the cross line passing beneath the patella; the flaps were with rapidity dissected back, and the shreds of the crucial ligaments spared by disease were divided, and next the lateral ligaments; in freeing the ligamentous attachments to the bones behind, the greatest precaution was adopted; all being separated to the extent required, I swept the knife around the tibia and the femur, close to the attachment of the soft parts, and then took the saw bearing my name, and cut the bones from behind forwards.

<sup>a</sup> Dublin Quarterly Journal of Medical Science, November, 1857.



"It is necessary here to lay caution on the operator in using the saw. He should ever remember the altered position of the limb, to facilitate protrusion of the ends of the bones, and, according to the angle of elevation must the direction of the blade of the saw traverse. The simple rule I would lay down for the correct execution of the section is this:—The blade of the saw must pass in a direction parallel with a line drawn in the transverse axis of the articulating surface; accordingly, this procedure was carried out. Thus, when the limb is placed in a horizontal position, the one in which it is to be maintained for cure, the cut surfaces of the bones will lie evenly together, no space will intervene between them behind or before; the wide surfaces oppose each other; all disposition to gliding one from the other is guarded against, and the most favourable circumstances are insured for intimate union. In the published records of cases it will appear that in some instances the surgeon has had to apply the saw a second and a third time, to make the bones meet: if this be so, I am warranted in enforcing my advice.

"By section planned after this method the condyles of the femur, with their connecting osseous bond, to the depth of a quarter of an inch in thickness, were cut off. To warrant the removal of these parts, I may just state, the incrustating cartilages of the condyles were entirely removed; the head of the tibia was similarly affected, and, in addition, deep pits were excavated by caries in each condyle, to the depth of a quarter of an inch. This being effected, all the thickened and diseased synovial membrane was clipped away, and the disorganized fatty mass below the patella; not a trace of the interarticular cartilages remained; the patella was coated with lymph beneath, and appeared to have struggled healthily from the disease around; it was therefore suffered to remain. Thus, then, the accuracy of the diagnosis was established, and examination of the osseous surfaces pronounced them healthy. Three arteries which bled rather freely were next tied; the flaps at the transverse incision were brought together, and maintained so by five points of interrupted suture; and the lateral incisions were left open for the ready escape of blood and serum, the purging of the cut parts. The leg was with ease put into the straight position, and placed at once in the padded box splint I had prepared for its reception. A splint was then laid over the anterior part of the thigh, and the tapes fastened, sustaining upwards the hinged sides of the box; the foot was steadied by a foot-board, falling into the grooves within, and thus the leg was pressed upwards so as to keep the divided osseous surfaces in

contact; lint steeped in cold water was laid along the lateral incisions, and maintained accurately in position by the sides of the box when elevated."

In my *third successful case of excision of the knee-joint* will be found some further precautions which should be borne in mind by the surgeon about to perform the operation\*.

I shall transcribe the case. Patient, aged 15:—

"On the 11th of January, 1858, I excised the joint, adopting the H incision; quickly the soft parts were divided and reflected, and cautiously they were freed from the bones behind. The ligamentous structures within the joint, the cartilages of incrustation of the three bones, were entirely removed, and the contiguous surfaces of the bones most extensively destroyed. The condyles of the femur were hollowed out and eaten away to about an inch in extent, while the surface of the tibia was also deeply excavated, corresponding to each condyle, the intervening part being irregularly removed, the patella was also deeply carious; hence I removed it at once from the upper flap. The diseased extremity of the femur was cut with the saw invented by myself, and the section made from behind forwards; and so likewise the unhealthy surface of the tibia. The section of the femur revealed a beautifully healthy aspect, while the section of the tibia showed a softened, irregular patch, about the size of a shilling, with a vascular fringe running round its confines, and separating it from the healthy bone outside. This appearance occasioned me to cut off another slice from the tibia, somewhat more than a quarter of an inch in thickness, and the section exposed a perfectly healthy condition, the normal arrangement of the bone. In all, there were about three-quarters of an inch, or a little more, of the tibia removed, and an inch and a half of the femur. The divided bloodvessels were small; no ligatures were required; and I at once placed the limb in the extended position, resting upon its posterior surface, in the apparatus which bears my name. Let it be borne in mind that, previous to the operation, the leg was considerably flexed and the hamstrings rigidly contracted. This condition offered serious opposition to the required posture at first, but by gentle, steady, and gradually increased force, they were compelled to yield. Now, in the adjustment of the bones, there is one practical point which I have not before alluded to, *neither is it noticed, so far as I am aware, by any*

\* See my Reports in Operative Surgery, Dublin Quarterly Journal of Medical Science, February, 1859.

*writer on this subject*, namely, the caution that is requisite, when straightening the limb, *to guard against any portion of the soft parts from behind projecting forwards, and thus interposing between the bones.* Such an occurrence took place in this instance during my first efforts to get the limb into a horizontal posture, but I perceived and rectified it at once; however, it might be easily overlooked, and, I have no doubt, would interfere in a very material manner with the firm union of the bones, or their growth into each other—a consummation so ardently sought for in these cases. Now, this untoward circumstance may be guarded against by the following manœuvre: namely, to adjust accurately, while the leg is yet flexed, the posterior margin of the cut surfaces of the tibia and femur, and while the sharp edge of one bone rests upon that of the other, the tibia and femur are gently forced backwards until the opposed surfaces rest fairly against each other. During this manipulation, then, the bones are pressed up firmly against each other, as well as with an equal force backwards. By this precaution the interposition of any softened structure will be effectually prevented. After this manner, then, the bones were fairly applied to each other, and afterwards the flaps laid down. They were brought together throughout the tranverse incision by a few points of the interrupted suture, while some folds of lint were laid in the lateral ones, the object being twofold: first, to prevent any immediate flow of blood, and, secondly, at a later period, to permit a free escape from the part, so that purulent matter should not be pent up; the front splint was laid down, and each side of the box was then lifted, and an additional compress of lint placed over the wound at either side, so that an even, equable support was given, maintained. During this entire adjustment, from first to last, the leg was pressed up against the thigh; and, to secure it in this position, the foot-board slid into the grooves for its reception was most efficient, steadying also the foot at a right angle with the leg. An additional pad, wedge-shaped, was placed at the outer ankle, and projecting upwards, so as to maintain the foot in a straight line, and prevent any drooping outwards or eversion. The straps were then buckled round the box, and the patient, still under the influence of chloroform, removed carefully to bed. She, however, awoke from her sleep quite unaware that the operation had been performed."

The next question to be considered is, *what should be the mode of managing the limb after the operation?* I have answered this in each of the foregoing cases. *It should be at once forced into the horizontal position, and put up before the patient is re-*

*moved from the operating table.* I claim priority for this advice and most valuable maxim, because the very words I have written have been copied, and without acknowledgment. In my first memoir, 1855, p. 58, it is written: "*Immediately after excision of the joint is accomplished, before the patient is taken from the operating table, the limb should be placed in the extended position, and retained so immovably in a solid case, such as I have described.* In some instances it has been shown that the difficulty to force back the femur, and prevent its projecting in front, has been very great; by proper manipulation, this difficulty can be overcome without violence, by one or other of the following measures. Generally speaking, this, the milder method, will succeed: when the ends of the bones are cut away, gradual yet powerful extension, continued for ten or fifteen minutes, and longer if necessary, should be made upon the leg, so as to counteract, tire out, and subdue the violent contraction of the hamstring muscles. During this manœuvre the thigh should be gently, yet steadily, pressed backwards, so that the cut surfaces of the bones may be opposed to each other, and then, being pressed back into a straight line, and retained so by proper supports, they offer mechanical resistance to each other, and thus displacement is prevented; but if this method fails, and it will most likely do so in those cases where the leg has been for a length of time flexed upon the thigh, and the muscles have assumed a spastic contraction of a settled character—here I would most certainly recommend the surgeon to *divide the hamstring tendons, in preference to cutting off another piece of the healthy bone.* This becomes more imperative when the head of the fibula has not been removed, and the tendon of the biceps interfered with; it is the powerful and spasmodic action of these muscles, dragging the leg upwards and backwards, that creates to a great extent the deformity, by the thrusting of the thigh-bone forwards; *by their division, then,* not only is reduction easily secured, but all tendency to after displacement checked. *The limb, I repeat it, should be secured from the very first in the extended position,* and rigidly maintained so through the entire cure. In my mind the same arguments apply here as in the treatment of fractures of the thigh<sup>a</sup>,—the object of the surgeon being in either case to avert spasm, and to obtain, as quickly as possible, a permanent osseous union between the disunited bones." And again, in my second memoir, the practice is as

<sup>a</sup> See my Essay on Fractures of the Thigh Bone, Dublin Quarterly Journal Medical Science, February, 1853.



forcibly inculcated at page 62: "I do not believe one word of the 'impossibility' of placing the limb in the straight position at once, and retaining it so; it can be done if the surgeon is up to his work; and this first adjustment can be made without any pain to the patient, as chloroform annihilates sensibility. I cannot find words to enforce, with the power I desire, the importance of this measure. Amongst the foregoing cases there are lamentable instances where it was not adhered to, and which, I trust, will appeal forcibly to the mind of every thinking man. Independent of the advantages of steadying the cut surfaces, the prevention of the divided bones from irritating the surrounding tender parts, the subjugation of all spasm, the limiting of the inflammation to the bounds only necessary for repair,—we have still another great benefit accruing from *putting up the limb at once*, namely, the mind of the patient is at rest; that protective watchfulness over it is removed, and which probably, prior to the operation, had caused nights of restlessness and want of sleep. The same apprehensiveness, when the bones are divided, will remain, aye, be increased, if the limb be not immediately fixed in the straight position; but if the control of the patient over the part be checked, he feels confident in the security; repose quickly follows, and sleep is generally induced; if not, opiates will act more certainly, pain being subdued."

*I am confident that the box-splint which I have used in all my cases is by far the best apparatus for securing immobility of the divided parts* in a proper axis, preventing projection forwards of the thigh-bone, keeping the divided osseous surfaces in contact, permitting a safe and ready way of dressing the limb without disturbance, and affording, at the same time, the greatest amount of ease and comfort to the patient under existing circumstances. The apparatus is figured as applied to one of my cases, in my *Reports on Operative Surgery*, and a description is thus given in my first memoir, two years before, at page 25: "The limb was placed in a horizontal position in a wooden case which I had made for the purpose. The sides were attached to the back part by hinges, so as to allow of being let down at the time of dressing; they were likewise of unequal lengths, the internal extending nearly as high as the ramus of the pubes, while the external passed up to the axilla, similar to the long splint used by me in fractures of the thigh; the lower end of each lateral piece presented on the inner surface a number of grooves about an inch apart, so that, when the sides were elevated, the foot-board was received into any opposite pair of them, according to the distance required; this

lower piece acted in two ways; not only did it maintain the foot at a right angle with the leg, but it steadied the sides, and prevented their being pressed inwards from their vertical direction by the tapes and buckles which girthed the apparatus on the outside. The box was supplied with hair-cushions, carefully adapted to its entire extent, some being covered with oiled silk. In addition to the posterior, lateral, and foot support, a broad splint, well padded, had to be placed over the anterior surface of the thigh, extending from a little below Poupart's ligament as far as the junction of the upper and middle thirds of the leg, and secured firmly down by the surrounding web-belts, so as to counteract the powerful tendency towards the distortion of the limb forwards. I have already mentioned that the external side of the case passed up to the axilla, the object being to secure the straight position for the limb. It was kept in contact with the trunk by a wide girth passed around both. The patient expressed himself as being very comfortable with the limb done up in this way, and it was satisfactory to the surgeon to behold it, every requirement seemed so entirely fulfilled."

Here, again, I wish to claim *priority for the application of the anterior splint, and likewise for the extension of the external one along the trunk, as also for the foot-board, gently retaining the foot in a proper axis, and the tibia in contact with the femur; it is a great error to suppose that this arrangement is not most advantageous, just as great as to suppose that the fractured extremities of a broken bone should not be placed in contact, or to argue that, because adapted, ulceration would be likely to follow.*

*The more rigidly the limb can be united the better,* for the reasons expressed at p. 59, Memoir I.:—"Some operators contend that a slight degree of flexion and extension is desirable after excision of the knee-joint. To this opinion I cannot subscribe for two reasons: first, because as a means of sustentation the limb would be found inadequate, and not so sightly in appearance; secondly, the very motion perpetuated between these bones, already prone to carry on unhealthy action, would become an exciting cause for a renewed development of disease. No; I conceive for perfection as a result of excision, *the tibia and femur should be grown into each other and bound by callus:* and, far better still, when the patella, deprived of its cartilage, and undisturbed from its birth in front, becomes fused into this connexion. A limb cured in this way will harmlessly endure the fatigues of travel. An objection has been made to uniting the limb in one solid piece, on the grounds of its liability to fracture being far greater than when some motion is

permitted between the bones. My answer is, such a result has never taken place; and I am equally certain that the force required to break the callus union or limb in any part of its length would entail far more grave and serious mischief if applied to a limb enjoying partial motion; in the latter, the fibro-ligamentous structures would be all torn up from their connexions, and, as a sequence, high and active inflammation readily set up, followed by the rapid formation of matter, and all its train of serious consequences. Even suppose this burst of mischief checked by energetic treatment, the danger would not be removed; a slow, insidious action would rouse up the latent disease, which in turn would prey upon the general health, until the only chance of preserving life would centre in amputation. Now, in the former case, no such dismal consequences present themselves; the fractured limb might be brought to its full length, and maintained so by the application of the long splint, until union be again accomplished." I have laid great stress upon *the careful dressing of the wound, and the free administration of sedatives, stimulants, and support at suitable times in these cases*, and most strongly insisted upon the practice<sup>a</sup>.

"The amount of success following all severe operative measures greatly depends upon the care and assiduity bestowed on the after-treatment, both locally and constitutionally. Probably, in the entire range of operative surgery, there is no class of cases which demands such close and attentive looking-after as that now under consideration. It will not be sufficient for the surgeon after he completes a severe resection, be it in ever so masterly a manner, to delegate his duties to another, and, after he puts aside the knife to consider his part done. No; if he is desirous of success, he must use his own hands, and be the dresser, while by his watchful eye he will readily discover the early threatening of incipient mischief. After all severe surgical operations I am in the habit of supplying stimulants and sedatives very freely, together with nutritious food apportioned to the assimilating powers of the individual. This treatment is more imperatively urgent when the patient is advanced in life, and has endured lingering disease for a length of time. It is, I would say, equally necessary to the infant and the child; whereas, in reference to the middle periods of life, the diminution or increase of supply must to a great extent rest upon the judgment of the practitioner. By the copious administration of stimulants the flagging powers of life are upheld; by the free exhibition of sedatives, pain and irritation and spasm are

<sup>a</sup> First Memoir, page 59.

subdued." Relative to the shock of the operation and the administration of chloroform, I have thus written<sup>a</sup>:—" *Happily, the shock now need not be so greatly estimated or dwelt upon. Chloroform protects the sufferer; and I certainly attribute much of the success which in latter days has attended this formidable operation, to the beneficial agency of this potent medicine. In nearly all the cases which I have collected, it has been used; in every successful instance narrated it has been given. In the case upon which I operated, the man was reduced to the lowest state, and would almost to a certainty have sunk from the shock either after amputation or excision; yet by this powerful means all violent struggles were prevented, and, of course, the patient saved from subsequent exhaustion. How different this tranquil sleep from the writhing torture of the sufferer under a similar operation described by Sir Philip Crampton: "The poor girl, who, in coming into the operating room, exhibited the greatest fortitude, and even cheerfulness, on the instant that the knife was applied to the skin became so ungovernable that four strong assistants could with the utmost difficulty retain her upon the table. This necessarily prolonged the operation, and no doubt very much increased its severity; the removal of the divided extremity of the femur was here rendered a work of infinite difficulty and danger, as, when the knife was passing between the popliteal artery and the bone, and actually in contact with the former, no entreaty could induce the poor girl, whom terror seemed to have deprived of her reason, to remain for one moment at rest, she struggled so violently with both limbs"*<sup>b</sup>. *In every case of resection which I have performed I have used chloroform, and to its administration I again repeat is due, I think, in a great measure the invariable success which I have met with.*

Briefly to recapitulate those directions for excision of the knee-joint, which I have laid down, and would still insist upon:—

1. *The judicious selection of the case.*—The bones not being diseased far beyond their articular surfaces; while, if upon section found to be a little more than had been expected, the part should be gouged out, or an additional thin slice removed; but, if to a greater extent, amputation should be at once resorted to, and, as recorded in my first memoir<sup>c</sup>, with a hope of excellent success. Again, the Report goes on to show that amputation may be performed some days after excision, should

<sup>a</sup> First Memoir, page 54.

<sup>b</sup> Dublin Hospital Reports, vol. iv., page 205.

<sup>c</sup> Page 64.



any unfortunate circumstance in the management of the case have arisen to demand it. In this same paper seven instances are recorded of amputation of the thigh, and all made rapid recovery, save one<sup>a</sup>.

2. *The H incision should be preferred.*—The perpendicular strokes placed well back, so as to allow all fluids and discharges to drain off—far more effective and safer than any opening made in the popliteal space.

No portion of the flaps to be curtailed, though they may be thinned, of any thickened fibrinous matter or diseased synovial membrane; the latter, particularly, should be clipped away with a strong scissors. All ligamentous fibres, both around and within the joint, should be cut through, and the extremities of the bones fairly freed and exposed.

3. *The patella should be taken away in all cases, whether diseased or not,* and then the section of the bones, well thrust out in front, should be made with "Butcher's saw" from behind forward, due attention being paid to the axis of the thigh bone at the time of its division.

4. *All bleeding vessels should be tied, or any that have sprung and retracted should be drawn out and secured,* so as to guard against intermediary hemorrhage.

5. *While the patient is yet on the operating table, the limb should be placed in the horizontal position, either by gentle and steady traction, combined with pressure of the cut surfaces of the bones backwards, or, if necessary, the division of the hamstring tendons.* Their support behind, in every case, I look upon as of great value, therefore their section must be looked upon as a last expedient towards straightening the limb.

6. *During the adjustment of the bones, great caution should be exercised, that their surfaces be throughout their extent in contact, and that no soft parts intervene.* The flaps should be then laid down, and connected by suture closely throughout their transverse division, while the lateral incisions should be brought together only at their extremities by one or two points, and the central portion of each, that corresponding to the division of the bones, should not be brought in contact, but dressed lightly with lint soaked in oil, thus securing a ready outlet for the escape of fluids. The extremity should next be cautiously laid upon "Butcher's box splint," padded to the natural configuration of the limb, its sides elevated, foot-board applied, suitable pads introduced, and then the anterior splint laid on, taking the place of the assistant's hand, which, from the first,

restrained the femur from projecting forward; then the straps buckled, the waist-band applied, and the patient may, with safety, be removed to his bed. The bed should be prepared in this way, and consist of a couple of hair mattresses laid one upon the other, evenly supported, and intervening between the upper one and the sheet a folded blanket, feather pillows for supporting the head and shoulders; the bed should be, likewise, moderately warmed, so as to prevent the patient being chilled when put into it.

7. *The limb should not be disturbed for several days; the length of time depending a good deal on the season of the year when the operation is performed, whether it be in the heat of summer or the cold of winter. After five or six days it may be necessary to let down the sides of the box-splint, to sop up discharge, change lateral pads, and soiled dressings, &c. By the apparatus named, the facilities for cleansing the limb are so efficient, that it may not be requisite to lift the member from its support for even so long a period as three weeks, as evidenced in my own practice. Should, however, it be considered expedient to change all the dressings; the anterior splint should be steadily held back by an assistant, and the limb pressed up to it, thus guarding against any starting of the femur forwards, or displacement laterally, when lifted from its bed. When the box is prepared, freshly arranged, the limb, controlled after the manner mentioned, should be laid down, the side splints elevated, foot-board secured, and the straps over the anterior splint first tightened so as to maintain it in that position, from which it was never suffered to change. I would impress this advice still further—if the straps be unloosed for any purpose, the hand of an assistant should steadily keep the anterior splint in its position, and well pressed back, until the artificial support is again brought to bear upon it, and fastened.*

8. *In cases where large abscesses form in the vicinity of the excised joint, or up along the thigh, Chassaignac's drainage tubes may be used with the best hopes of success<sup>a</sup>.*

9. *The free administration of stimulants and sedatives, imperatively demanded in all cases of excision, regulated, to a certain extent, by age, sex, temperament, and habit.*

<sup>a</sup> See Butcher's Reports in Operative Surgery, Dublin Quarterly Journal of Medical Science, February, 1859.

ART. VIII.—*On some Actions performed by voluntary Muscles which by habit become involuntary ; with Practical Applications.* Part II. By JONATHAN OSBORNE, M.D., King's Professor of Materia Medica ; Honorary Fellow of the King and Queen's College of Physicians in Ireland ; Physician to Mercer's Hospital, &c., &c.

“Illustrans commoda vitæ.”—LUCRETIVS.

#### ACTIONS CONNECTED WITH RESPIRATION.

THE act of inspiration is performed by muscles which have the structure of voluntary muscles, and in our waking hours are completely under the control of the will. We are able to accelerate, retard, or alter the capacity of our inspirations according as may be required for the purpose of speaking, or for other muscular exercises ; but there is a certain limit beyond which our dominion over them ceases. Thus, during sleep, or during epileptic seizures, respirations are continued without any consciousness or effort on the part of the individual, and even when consciousness remains perfect there is a certain limit beyond which our dominion over them ceases. Whenever an individual strives to cease to breathe altogether, he finds it to be an impossibility. Among all the various modes by which the act of suicide has been accomplished, and under all the circumstances causing the unhappy individual to wish to extinguish life in the readiest manner, and without the aid of external instrumentation, yet no one has ever been found able to stop his breath simply by ceasing to contract his diaphragm and intercostal muscles. Even though possessed of the fortitude of a Cato, yet when he holds his breath for even a very few minutes, a faintishness ensues, in consequence of the interruption to the circulation through the lungs preventing the passage of the blood from the right to the left cavities of the heart ; the voluntary power over the respiratory muscles is lost ; the dominion of habit is unconsciously resumed ; the diaphragm recommences its usual contractions ; and air is readmitted as before.

The average number of respirations in health is about eighteen, or one-fourth of the number of pulsations of the heart. The proportion of respirations to pulsations is greatly increased in acute pleurisy, in consequence of the pain preventing full inspiration, while, in acute pericarditis, the proportions are completely reversed, from the greater excitement of the heart, and the comparatively small pain produced by inspiration, which, therefore, continues at nearly its usual rate. In violent

mental emotions the heart and the respiratory muscles are both equally thrown into excessive action; but in such cases the heaving of the chest or panting is much more remarkable in women than in men, from the respiration in the former being carried on more by the intercostal muscles, and less by the diaphragm, than in men. When we make a stethoscopic examination of the chest of an individual in this state of oppression from mental emotion, we hear the sounds belonging to imperfect closure of the left auriculo-ventricular opening; the mitral valves appear to be held down by a spasmodic action of their pillars: thence arises regurgitation of blood into the lungs, with all the symptoms appertaining to organic disease of the mitral valves, as long as it lasts, from which, indeed, it can be distinguished only by the fact that it occurs in a transitory, and not in a permanent manner.

On the other hand, the proportion of respirations is greatly diminished below the natural standard, when the mind is absorbed in anxious or sad reflections. In such cases the individual breathes not only with such long intervals, but with such imperfect inspirations, that he is forced every now and then to recollect himself, and to compensate for the deficiency by drawing in a full and complete inspiration. By doing this, he is enabled to forward the passage of the blood through the pulmonary vessels, and this relieves the turgescence of the right cavities of the heart. That this is the true explanation of the kind of oppression which prompts us to relieve ourselves by a deep inspiration called a sigh, is, in fact, proved from the late experiments of Piorry, published in a paper read at the Académie des Sciences, 1858. By the application of his plessimetre, he ascertained that repeated deep inspirations like sighs actually produced a diminution in the space occupied by the right cavities of the heart, and he states that in cases referred by him to spasmodic asthma prompt relief was obtained from taking these deep inspirations. To these observations I would add, that whenever the respiration becomes oppressed from over-exertion, a few very deep and deliberate inspirations afford infinitely more relief than a number of short ones. This may be easily tried by any individual *out of breath* from unusual muscular efforts. The most decided and actually the most speedy ease is obtained, not from rapidly panting, but from a few deep-drawn and rather tedious inspirations. Besides the mechanical assistance imparted to the free passage of the blood through the pulmonary vessels by the expansion of the chest in inspiration, the process of arterialization of the blood itself requires the respirations to be of a certain duration as well as depth.



This appears so obvious, that it is almost inconceivable how it should ever have been overlooked, and yet, that it has been overlooked, is evident, from the great discrepancies in the statements of different chemists of undoubted skill, who have published analyses of expired air, the carbonic acid according to some being 8, and according to others less than 4 per cent. It has, subsequently to the analyses now alluded to, been ascertained by Hervier and St. Lager (*Académie des Sciences*, 1849) that the air expired by persons running a race actually contained no carbonic acid at all. In such a case, then, all that rapid and short respirations can effect, is to diminish the congestion and strain on the right cavities of the heart, by forwarding the transmission of the blood through the lungs. But, notwithstanding all the respiratory efforts of the individual, still, no arterialization of the blood is effected, and the individual may be asphyxiated while he appears to be breathing with unusual celerity.

From these facts a practical conclusion follows, that, in as far as the function of respiration is performed by voluntary muscles, we should draw in each inspiration, fully and not in a hurried and incomplete manner, and that this caution is most necessary for those who, by reason of advanced age, or other depressing circumstances, labour under debility and passive dilatation of the right cavities of the heart. I consider that I have very materially diminished the dyspnœa of patients in chronic bronchitis and emphysema, but more especially in the disease so unhappily termed fatty heart, by exhorting them to attend to this particular. It is so apt to be neglected, that general directions are not sufficient, and it may be best to enjoin on such patients, or on persons of exclusively sedentary occupations, that three or four of the fullest inspirations should be taken at each hourly striking of the clock, with due caution, however, in case of the co-existence of valvular disease at the left side of the heart, lest a too rapid transmission of the blood from the lungs should augment the oppression in that quarter.

As the quantity of air taken in at each inspiration averages 20 cubic inches, and as the quantity of air remaining in the lungs averages 120 cubic inches, and as the air tubes conveying this air to the ultimate air vesicles of the lungs are in health incapable of dilatation, it follows, taking the number of inspirations as one in every three seconds, that nearly eighteen seconds must elapse before the external air is completely received into the lungs, and the result of this calculation approximates very nearly to the time required for the inhalation of chloroform before its anæsthetic effects are produced. And

here again, for the proper administration of chloroform vapour, the patient should be exhorted to take full and deep inspirations. Thus the anæsthesia is most speedily brought on; the constraint on respiration greatly reduced, and, consequently, the danger of asphyxia diminished.

A subject connected with respiration, which I have not seen anywhere noticed, is the arrangement by which the individual is protected from receiving back the air which he has expelled from his lungs. By the septum of the nose the column of expired air is divided into two separate jets. These are projected downwards from the nostrils at an angle of about  $45^{\circ}$  from the vertical axis, and divaricate from each other at an angle of  $80^{\circ}$ . It is easy to observe this on a cold and damp day, when the expired moisture is immediately condensed and rendered visible. Each jet is propelled to a distance of ten or twelve inches from the nose before it rises up and is dissolved in the surrounding air. Now, as an interval of only about one second intervenes between the going-out and coming-in jet, it follows, that if they moved exactly in the same line, much of the expired air would be received back again. But, in addition to the distance to which the expired air is projected by the force of expiration, which has been proved by experiment to exceed that of inspiration by one-third, we see here that the foul air is sent off in a lateral direction, never to return, as the fresh air is inspired from another direction, namely, that lying within the angle formed by the jets of expired air. And this separation is accomplished, no matter whether the individual is in the horizontal or vertical position, or whether stationary or in a state of progression, as is evident by holding a diagram in these different directions. It is only when lying on the side and inclining forwards that the direction of the underneath jet is interfered with; and this appears to be a principal cause of the general preference for lying on the back in summer, or during close weather<sup>a</sup>.

This leads to the subject of respirators. The object of these instruments is to insure a certain uniformity of warmth and moisture in the air to be inspired. Now, in breathing through the nose, nature has made a provision for this purpose. The air, in the first place, has to pass through the hairs of the nose, which cross each other, and form a kind of veil, so as to intercept foreign particles floating in the air, like the gauze veils through which the air is pumped in modern ventilating machines. Next, the anfractuosities of the nasal passages commu-

<sup>a</sup> See Part I., vol. xxviii., page 121.

nicate to it both heat and moisture, before it arrives at the rima of the glottis. When we breathe through the mouth, not only are these advantages lost, but an unpleasant dryness is perceived in the mouth and fauces, the peculiar sensibility of which has not been adapted for the transmission of air, no more than the sensibility of the nose for the transmission of fluids. Hence, unless in some peculiar cases, respirators or other contrivances for warming the air to be inspired, should be always applied to the nose, and not to the mouth.

Tobacco-smoking, which is usually adopted as an amusement during the thoughtless and frivolous season of youth, after a short time establishes itself as a habit, and at length becomes an imperious necessity, continuing with many to the termination of their earthly existence<sup>a</sup>. The selection of this one plant for the purpose of smoking has arisen not merely from its fragrant or narcotic qualities, in which it is manifestly inferior to many others, but from its smoke being nearly free from creasote and the other pungent and suffocating products of the combustion of vegetable fibre, of which it contains only a very minute proportion. Add to this, that its two narcotic constituents, nicotine and nicotina, being both volatile, are at once, and at the first application of heat, drawn up from the pipe or cigar<sup>b</sup>. In our ordinary smoking the smoke is drawn into the mouth from the pipe or cigar, by opening the jaws and depressing the tongue, while the lips are compressed, so as to form a cavity as in the act of suction. The smoke thus received into one side of the mouth is let out at the other. None of it is inspired, except from what has passed into the circumambient air, and consequently the individual, if he avoids swallowing the saliva, may be scarcely affected by it. In some eastern countries a very different mode of smoking is adopted. The smoker actually inspires the smoke into his lungs as in the act of respiration. The narcotism thus produced may, in the uninitiated, be followed by serious and even

<sup>a</sup> And even beyond it, according to an old divine, who used to say, "Those who smoke here shall smoke hereafter."

<sup>b</sup> From a similar deficiency of vegetable fibre, cabbage-leaves are well adapted for mixing up with tobacco in the manufacture of inferior cigars. According to the experiments of M. Malapert, of Poitiers (*Froriep. Jour.*, 1854), the nicotine drawn up in tobacco smoke is speedily condensed when not accompanied by moisture. Hence dry cigars are mildest, and the first half of a cigar always smokes milder than the last half, which contains both more watery vapour and also much of the nicotine condensed from the first half. Hence real amateurs of cigar-smoking throw away the last half of each cigar. In smoking with the ordinary pipe, much of the nicotine is absorbed by the pipe-clay; the smoke also becomes milder when the tube is long and the bowl small. Much of the nicotine, along with other matters, is got rid of by smoking through water, as in the Chinese pipes.

fatal results. I once had the happiness of knowing a gentleman, a native of Greece (since dead), who showed me this mode of smoking. He drew a long inspiration from the pipe, and when he expelled it from his chest the quantity of smoke emitted seemed prodigious, so that in the one whiff he appeared to have nearly filled a large apartment<sup>a</sup>. He informed me that some English officers in his company, during the war in Greece, attempted to smoke in this way, notwithstanding his cautions against it. After a very few inspirations, they became sick and faint, began to stagger, and, although long accustomed to ordinary smoking, would have fallen down had it not been for his assistance. Were it ever to become a desirable object in medicine or surgery to produce syncope within a short period of time, perhaps no more ready method than this could be adopted.

The practice of smoking has now, within three centuries, established its dominion over the whole world, in spite of the Counterblast of a King of England, in spite of the Pope Urban VIII., in spite of the Sultan, of the King of Prussia, of the Czar of Muscovy, who punished smokers first with the knout, and afterwards with death; and is now so firmly established as to be not only tolerated, but recognised as furnishing one of the most important sources of public revenue to every civilized country. After the numerous remonstrances against it from philanthropists and divines, it appears a vain task for the medical profession to continue their opposition. Its rapid increase, however, within the last few years, justifies us in renewing our protests. To the physician it more especially belongs to denounce it, from the knowledge which he possesses of the paralyzing effects of tobacco, not exercised so much on the sentient nerves as on the heart itself,—the centre of life and motion. True it is, that men overworked in mind or body are soothed by tobacco-smoking, but, when largely and habitually indulged in, as it often is by those who have no such apology<sup>b</sup>, although its dangers are overcome by the law of habit, to which all narcotics are subject, yet it not only produces listlessness and apathy, impairing the energies of youth, but in many instances induces a necessity for the use of vinous or spirituous liquors, in order to combat the sensations of relaxation and lassitude which are its necessary result. There are many other evils not belonging to the subject of this paper to detail: one peculiar

<sup>a</sup> "Faucibus ingentem fumum mirabile dictu

Evomit involvitque domum caligine cæcâ."—VIRG. *ÆNEID*, viii. 252.

<sup>b</sup> According to the Report of the University Commissioners (1850), a student's tobacco bill often amounts to £40 a year.



symptom, however, caused by tobacco-smoking, which I have not seen elsewhere described, I take this opportunity of mentioning. It is this: the smoker feels a pain, dull, and, although not acute, yet distressing, from the constant sense of oppression which attends it. Its seat is behind the breast bone, and rather tending to the left side. It is neither aggravated nor diminished by full inspiration, nor by any change of posture; comes on usually in the afternoon, but irrespectively of meals, and sometimes increases in severity during the night, so as to interfere with sleep, yet almost completely vanishes before morning, and this without any appreciable disturbance of the circulation, respiration, or digestion. My attention was first directed to it by a gentleman, at that time attending the clinic at Sir Patrick Dun's Hospital, who having contracted the habit of smoking, suffered much from this pain, which resisted every remedy till he gave up his pipe altogether. Within less than a month afterwards it ceased, and never returned. I have subsequently met several similar cases, and in some of these ordered only the most insignificant medicines, but always insisted on a total abstinence from smoking, and in every instance, as far as I have been able to ascertain, with uniform success. This affection, in all my cases, occurred before the middle age of life, did not appear to be produced by any one kind of tobacco more than another, attacking indifferently the votaries of Cavendish and Mundungus. From the vagueness of the seat of pain and its transitory character, it would appear to be a semi-paralytic, and consequently a neuralgic, affection of the central and anterior portions of the diaphragm.

Although the smoker merely passes the smoke from one side of his mouth to the other, and thus does not inspire it in the act of smoking, yet he cannot avoid inspiring some of the air which he has infected, and thus he always receives some of it into his lungs. The amount received is greatest when a number of smokers are congregated together in a small apartment, but is much reduced when in the open air, and especially when he has the advantage of escaping from his own smoke by being in a state of progression. The extent to which the air may be contaminated even by a single smoker is readily perceived by the passengers following him along a public road, many of whom, even at a distance, may inhale more of the smoke than the smoker himself. The effects of tobacco-smoke on unoffending parties are sometimes very decided and important, although generally overlooked. In the case of a printer's apprentice lately in Mercer's Hospital, it was evident that the præcordial pain above described, which he had in a high degree,

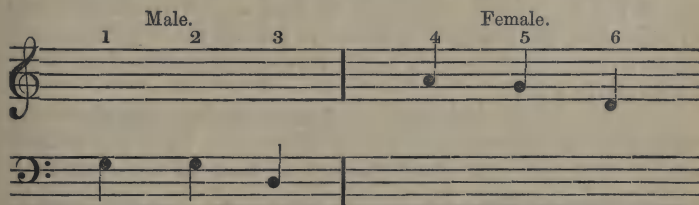
was caused by the atmosphere of smoke raised by his companions, rather than by any of his own production, for he did not get rid of it till he quitted the workshop.

And now, for a more general reflection suggested by these observations on smoking. If a single individual, by the expansive force of a few cubic inches of smoke passed from one side of his mouth to the other, can affect, as he does, all within a circle of twenty yards, or upwards, to what extent is it not in the power of every individual to affect others, when expiring twenty cubic inches from the air-tubes of his lungs in the course of ordinary respiration? And what limit can we fix to his power of polluting the air, and of spreading the matter of contagion, if it happens to be present in his system? The mixture of airs, which has passed through so many lungs, which we are obliged to breathe, when living in society, is truly formidable in a medical point of view. In any, even the largest public edifices, it is certain that some of the air expired by each individual present will be respired by all the rest, and it certainly should tend to lower the fastidious and exclusive notions belonging to rank and station when the patrician finds himself condemned by the decree of Providence, if not to drink out of the same cup, yet to do what is by far more disgusting, to inspire the air which has just passed out of the lungs of the vilest of the plebeian crowd standing before him.

#### VIBRATION OF THE RIBS AND PITCH OF THE VOICE.

That vibration of the ribs, which is perceptible when we place the hand on the side of a person speaking, belongs only to adults. For its production a certain depth of voice is required, which never exists in children, and is of very rare occurrence in females. It is most perceptible at the arch of the ribs, near the spine. It is most perfect in health, and is not impeded by consolidation of the lung, nor by emphysema, but is very decidedly diminished in those parts which are occupied by effusions of fluid into the cavity of the pleura: and this fact in doubtful cases may assist in forming a diagnosis. Some phenomena connected with this vibration of the ribs have not as yet been fully investigated. Vibrations of many dense substances occur when low notes are sounded by a musical instrument, with sufficient loudness, in the same apartment. This is often perceived in a church, when the bass notes of an organ cause a tremor, not only in the boards of the flooring or seat where we happen to be placed, but frequently also in some of our own tendons, which may chance to be strung to that particular pitch. Now this vibration is produced

only by low notes, and is not excited by any other, no matter how loud. The same is the case with the ribs, as is easy to prove on any individual. If he sing the descending scale of the gamut, the vibration will not begin till he arrives at a certain low note. But the most remarkable fact is, that the highest note at which the ribs vibrate is the very note in which the individual habitually speaks. Let him speak in any other note, and especially in any higher note, then no vibration takes place. Now every one in his ordinary speech perseveres in using the one note, except in some cases of peculiar emphasis, or marked accent, when he sometimes uses the third or fifth of this, his speaking note. What are called inflections of voice, although constituting great beauties and varieties of elocution, are rarely more than varieties of loudness, or of quickness, or of pauses. Any other change in this respect, as may easily be proved on trial, attracts immediate notice as being unusual, and would be called singing. And again, if we apply our hands to the ribs of one singing, no vibrations of the ribs are perceived except on the occurrence of the one note, namely, the individual's habitual speaking note, or the notes below it. From this connexion between the highest note of vibration of the ribs and the habitual speaking note, the question at once arises—do they stand in the relation of cause and effect? It appears most probable, that an ease and a comfort are felt in speaking in unison with the highest vibrating note of the ribs, which involuntarily leads to the preference of that one note<sup>a</sup>, and that thus is decided the pitch of the voice of every individual, which is so material an element in his identification and physical character as often to enable us to recognise him though unseen, when speaking in another apartment. In a circle of six persons associating more or less together, and who, if voice depended on imitation, should all speak in the same note or in octaves, the following are the speaking notes:—



A remarkable illustration of the connexion between the vibra-

<sup>a</sup> As the pace in walking is decided by the swing of the arms. See Part I., vol. xxviii. p. 132,

tion of the ribs and the speaking note, and which proves it to be necessary, and not accidental, is, that in singing, as is well-known, there is a constant tendency to become flat, but that in speaking, however long continued, this one speaking note is always maintained, and that, too, under circumstances of great oppression and fatigue.

It must not, however, be objected that the vibrations belonging to each individual rib, depending on its length and thickness, would cause each of them to vibrate to only one note, in which the others would not join, and that there should be as many vibrations to distinct notes as there are ribs. On the contrary, it is the entire osseous and ligamentous case of the thorax, bound together in one, which vibrates; and although most distinct in the ribs towards the axilla, yet it is participated in by them all, provided the voice is sufficiently deep and loud. According to my observations, the highest note at which vibration of the ribs can be produced is G below the staves of the treble clef. Before the adult age, and in females at any age, whatever connexion may exist between the speaking voice and the ribs, it cannot be perceived except in some exceedingly rare cases. The vibrations of the rings of the trachea, on the contrary, are to be felt in all cases throughout the whole range of the voice up to the false notes, where they cease; yet they are most distinct at the speaking voice note, and at this note, and near to it, the singer always has his finest tones. In catarrhal hoarseness the voice-note is either entirely muffled by the thickening of the mucous membrane, so that the patient speaks in a whisper, except immediately after giving a hem to dislodge the mucus, or it assumes a slightly deeper tone, apparently from relaxation of the ary-tænoid muscles. This change of the speaking note, even when so trivial as not to amount to the interval of half a note, is at once taken notice of as causing an alteration in the characteristics of the individual, and when we hear an old friend speaking in this way, he scarcely appears to be the same person, and seems to have undergone a temporary estrangement from what he formerly was.

But it is in the last stage of Asiatic cholera that the voice undergoes the most extraordinary alteration. Here the patient speaks in a thin and sharp note, like that of the reed in a child's penny trumpet, *tenui modulatus avenâ*; and this squeaking, shrill voice, combined with the cadaverous aspect and marble coldness, strikes us with horror, as denoting a change in all that connected him not only with former intimacy and friendship, but with life and humanity. When we hear such



a sound proceeding from the lips of one in all other respects apparently dead, we can hardly divest ourselves of the idea that it is merely the result of some galvanical experiment performed on the cadaver, while the patient himself has actually left this scene of existence, and has passed into the precincts of the invisible world.

Loudness of voice is usually regulated by the requirements of our associates. Those who have for their companions persons of sharp hearing acquire imperceptibly the habit of speaking softly and almost in a whisper, but those who live with the deaf, or converse much out of doors, may learn to speak so loud as to be thought boisterous and noisy with others<sup>a</sup>. It has been observed that men who habitually speak *under their breath*, have either been solitary students, or else belong to the poorer and more obscure classes of society, who occupy small apartments, where loud speaking is never required, and who are accustomed to obey rather than to command. In the act of whispering, the air is articulated by means of the muscular apparatus of the mouth, and especially by the lips, while the larynx and trachea are restrained from vibrating. On placing the fingers on the front of the throat during a whisper, no vibration of these parts is perceived, and when the larynx has been destroyed by ulceration, and the voice is completely gone, still the power of whispering remains. In ordinary speaking the loudness depends on the force engaged in expiring the air to be articulated, and this again on the quantity of air taken in at each previous inspiration. That the quantity of air inspired should have much influence on the general health, is obvious from what has been already noticed, and also from the benefit derived from exercise, which acts chiefly by promoting the function of respiration. Want of exercise, as in persons of sedentary pursuits, has been always found to predispose to phthisis; and statistical observations are recorded which show that want of exercise of the vocal organs has that tendency in a high degree. Among those condemned to perpetual silence, as the deaf and dumb, the frequency of phthisis is notorious. Dr. Lombard, of Geneva, also found that in makers of watch-chains, engravers, and tailors, there were 171 cases of phthisis out of 1000; and that among soldiers and gendarmerie there were 200 out of 1000; but that, on the other hand, among those persons whose avocations obliged them to great use of their vocal organs, either by singing or speaking, they averaged

<sup>a</sup> Στέντορι είσαμένη μεγάλητορι χαλκεοφώνω

"Ὅς τόσον αὐδήσασχ' ὅσον ἄλλοι πεντηκοντα.—II. v. 785.

only 75 cases out of the 1000. Hence, then, there was some apology to be offered for the parson who, when his parishioners remonstrated against the length of his sermons, replied, that he found long preaching was beneficial to his lungs.

#### ARTICULATION AND SPEECH.

When we come to the muscular apparatus used in articulation for the purposes of speech, an immense field of observation presents itself. Here we find every individual of the community, in the acquisition of the vernacular language during infancy, overcoming difficulties which would be impossible, were it not that we are both taught by imitation, and coerced by necessity. The perfection ultimately attained, and the readiness of utterance gained by many even in early infancy, would, if duly analyzed, be found to require a tact and rapidity of action surpassing by far those performances of manual dexterity, at which the world wonders. Even Paganini's performance on the violin would vanish into the shade before them; and yet all, sooner or later, before the fifth or sixth year accomplish this great task. Commencing with "*papa*" and "*mamma*," which are the first words learned in all languages, ancient and modern, the progress in the art of speaking advances according to the requirements of the individual; in some instances confined to the subjects of trade or agriculture, among which the lot of the individual is cast; in others attaining a degree of fluency which, considered *à priori*, would appear incredible. In Gibbon's memoirs of himself<sup>a</sup> he mentions that, as he was waiting in the manager's box, at the trial of Warren Hastings, he inquired of the short-hand writer how many words a ready and rapid orator might pronounce in an hour? The reply was from 7000 to 7500. Now the medium 7000 will afford 120 words in a minute; that is, an average of two words in each second.

We have in Herodotus<sup>b</sup> an account of a curious experiment instituted by Psammeticus, King of Egypt, with a view to ascertain the original language of mankind. For this purpose two new-born children were committed to the care of a shepherd, with strict injunctions that they should never be spoken to, and that they should be kept in a state of absolute seclusion, access being only allowed to the goats who supplied them with milk. At the end of two years, when the shepherd one morning opened the door, they suddenly called out the two syllables *βεκος*, which, being in the language of Phrygia the

<sup>a</sup> Vol. i. p. 172.

<sup>b</sup> Herodotus, Clio, 2.

word signifying bread, was considered as decisive of the antiquity of that language. In this word, however, we see only two of the easiest articulated sounds; the first syllable, produced simply by closing the lips, might be learned from the goats, and the last produced by closing the rima of the glottis, might be both heard and learned in the act of coughing. Hence, although imperfect as a proof of the fact supposed to be ascertained by it, yet the account may be accepted as probable, and as illustrative of the first steps in learning the art of speaking.

The number ten, as being the sum of the fingers of both hands, is most convenient for carrying on the processes of mental arithmetic. Hence it is the basis of the decimal or Arabic notation, and in all languages appears to be adopted as the point of division, the numbers up to ten being simple, and afterwards compounded from it. This is certainly the case in Sanskrit, German, Greek, Latin, French, Welsh, and also in Arabic, Persian, Hindostanee, and Hebrew. The antiquity of the practice of finger-reckoning is recorded in one instance by Herodotus<sup>a</sup>, where Ariston, on being informed, as he sat in council, that his wife had brought forth a son, makes a computation, on his fingers, as to the number of months which had elapsed since his marriage (*ἐπὶ δακτύλων συµβαλλεοµενος τους μηνας*), and Larcher in his note has quoted a passage to the same effect from Juvenal:—<sup>b</sup>

“Felix nimirum qui tot per sæcula mortem  
Distulit, atque suos jam dextrâ computat annos.”

This part of our subject is not unworthy of notice, inasmuch as it presents a direct evidence of connexion between the structure of words, and the structure of a part of our bodies most remote from the organs of speech.

But to return to articulation. In speaking, there are some combinations involving difficulties, which are seldom overcome till the child has attained an age of three or four years. Some of these are peculiar to certain nations, and are always more or less difficult to foreigners, such as *the* of the English, *cœur* of the French, the *ci* of the Italian, and many others, which belong to every language. The Shibboleth of the Hebrews, and the word *Cicero*, which was used to distinguish the French from the Italian at the Sicilian vespers, are historical examples of the same kind. In our own language there are some words which are never completely acquired by certain

<sup>a</sup> Erato, 63.

<sup>b</sup> Sat. x., 248.

individuals, and form permanent imperfections in their speech. One cause of this is *the lisp*, caused by a too close approximation of the tongue to the upper incisor teeth in pronouncing the letter s, as in the following example:—"Thith ith a therioth abthurdity." The burr is another frequent defect, caused by want of fixedness of the velum in pronouncing the letter R; and, in consequence of that part being very little under command, is rarely, if ever, to be cured, and generally continues more or less during life. Individuals thus affected, however, sometimes endeavour to remedy it, either by omitting the obnoxious letter in every possible case, or by pronouncing it with the lips, and thus they contrive to dispense with the use of the velum altogether. Of this there was a well-known example in an eminent member of our University, of whose mode of speaking the following specimen has been handed down to us, viz.:—"If we aw to be depwived of ou wights and pwivileges, it mattaws little who aw to be ou mastaws."

The nasal sounds (as in *Sunday, Monday*) require that the passages through the posterior nares shall be open, and when the back of the pharynx is swollen to such an amount as to close those passages, the nasal sound cannot be produced, and they are pronounced *Sudday, Mudday*. In cases of severe cynanche, when the tonsils are so enlarged as to come into contact, and to close the access of air by the mouth, suffocation must ensue if at the same time the posterior nares happen to be closed. Hence, in cases of this kind, it is advisable to try how the patient can pronounce these words, because any imperfection of them, combined with the anterior closure, would denote a state requiring immediate interference; and I cannot refrain from the suspicion, that many cases of sudden and unexpectedly fatal termination of sore throat might have been averted by an early attention to this point.

#### IMPEDIMENTS OF SPEECH.

The unfortunate individual who labours under an impediment of speech, in most cases also labours under an insensibility as to the disadvantages resulting from it. Accustomed to stammer from an early age (for it is always acquired in youth), he forms an under estimate of the amount and importance of his infirmity, and the politeness of his friends who wish to conceal the annoyance inflicted on them, contributes to keep up the delusion. Frequently, however, when made painfully sensible of the impatience of his auditors, or when peculiarly exposed to observation, as in the act of accosting strangers, he becomes agitated, makes renewed efforts, which



are only productive of increased difficulties, causing not only frightful distortions of the whole countenance, but also gesticulations of other parts of the body. Some there are who endeavour to escape observation, and shelter themselves in silence, but fewest of all are those who have sufficient energy and perseverance to overcome the defect, by a sedulous application of any one plan of treatment; and yet of several under my observation, at different times, I must say deliberately that I never saw one case that did not appear to me susceptible of great amendment, if not of complete recovery.

The stammerer, often from mimicry in the beginning, and then from repetition, unchecked, has acquired the habit of always repeating the first syllable of every sentence, and is unable to go on under any other condition. Now this is to be prevented by recalling the vocal organs from the dominion of habit to the dominion of the will. The means of accomplishing this are the following, viz.:—

FIRST, speaking in a much louder tone than usual, and keeping up the loud tone on every occasion, and without any relaxation, even among intimate friends, or when speaking on the most trivial subjects.

SECOND, imitation of good speakers, as public orators or actors, and the constant retention of some model of this kind before the mind. This recollection, constantly maintained, and constantly presenting an object for imitation, keeps the attention always alive, and thus dissevers the old associations of habit by forming a new one. In some cases it may be necessary to go further, and to adopt a formal and measured cadence, and even to speak in recitative, or in a style resembling ecclesiastical intoning; and it is well known that stammerers who have been instructed in music are able to sing without any hesitation or difficulty whatever.

THIRD, a sedulous avoidance of articulating any syllable *during inspiration*, a practice which is sooner or later acquired in stammering, and, as long as it is continued, always prevents a cure, and therefore must be attended to from the very commencement. The great desideratum, however, in all cases of impediments of speech is perseverance, and a fixed resolution to pass through an unceasing course of self-denying and laborious effort till the cure shall be accomplished. Of this perseverance we can propose to the patient the illustrious example of Demosthenes, who, according to Plutarch, cured himself of stammering by pronouncing verses and orations with pebbles in his mouth, and even when walking or running up steep places. In this kind of discipline he certainly ran the risk of swallow-

ing the pebbles, unless his attention was perpetually directed to the muscles engaged in articulation; but such were the means whereby he kept his attention on the stretch, and withheld them altogether from the dominion of previous habit. Although a physician would be unwilling to allow his patient to expose himself to the risk of swallowing stones, yet the future orator saw that nothing less would accomplish his object, or satisfy his fixed determination to accomplish it.

#### HABITS OF LANGUAGE.

To the same dominion of habit must be referred the utterance of words without meaning. Happily, the profane use of oaths has been almost abolished within the memory of this generation. At present it is confined to the lowest and most depraved classes of society, or to a few survivors of the old school, who, from early association, find it difficult to refrain. Without for one moment attempting to palliate the practice of swearing, it must be conceded that in the cases alluded to it may be much more the result of habit than of intention; and it must be admitted as a proof of the spread of religious influences, that what was so generally prevalent and so familiarized to both speakers and hearers at no distant period, has now been almost entirely driven from the field of observation. In this instance habit has been made to yield to the weight of higher motives, more generally diffused through all ranks of the population. There is, however, another kind of habitual and unmeaning utterance of words which unfortunately remains a subject for constant reproof and correction, and this is the repetition of the formularies of religion without entering into their meaning; thus causing them to become merely a muscular, and not a spiritual exercise. Of this we are repeatedly warned in the Gospels, and St. Paul has evidently the same danger in view when he directs us to make our *requests* known, here not using a word meaning our wants, which might be learned by rote; but rather the word meaning our actual present desires and solicitations (*αιτηματα*). In this passage he seems to speak from a personal experience of the tendency which we all have to let words run on without a participation of the mental faculties, and thus urges us to an active employment of both the intellect and the affections in all our supplications for the divine favour and assistance.

To pursue the same influence of habit on language—the use of cant words and pet phrases, acquired by individuals in their intercourse with others, and then unconsciously intruded into their own daily conversation, is matter of general observa-

tion, and requires a watchful course of education to eradicate or prevent. To go still further: so strong is the tendency to adhere to certain forms of expression, that even the best authors, ancient and modern, are found to confine themselves to certain selections of words, to the exclusion of all others. Thus in a copious language, as Greek or German, the learner has only to acquire a perfect knowledge of some of the first pages of each book in order greatly to facilitate his acquisition of the remainder. Perhaps no stronger illustration of the force of habit on language can be given than is supplied by this fact. Here a superior mind, capable of instructing others, and deeply interested in using the words most appropriate to express his ideas, yet moves in a harness, and is confined to a certain limited assortment of words and expressions, to the neglect of others, although he may be perfectly aware of their value and importance.

If, then, habit has the effect of rendering not only ordinary muscular actions, but even words involuntary, and if, as a necessary consequence, it involves with them also modes of expression and modes of thinking, thus determining the character of each individual, it appears impossible to over-estimate the importance of early education. Perhaps no class of the community has better opportunities of forming a judgment on this subject than the members of our profession. The medical practitioner, admitted as he is to the interior of households of all creeds and conditions, and called upon to visit them when most off their guard, cannot fail to have forced upon his notice the greatest variety of forms of selfishness fostered by unchecked habits of self-indulgence, and causing not only present misery, but leading to the degradation and downfall of families in the succeeding generation. The physician who sees humanity in the sick-room and on the death-bed, no less than at the fashionable watering-place, is sooner or later able to penetrate the secrets of character, however disguised so as to impose on the rest of the world. To him, the spoiled child, the heartless flirt, the youth who is lounging his life away, the habitual canting hypocrite, are all exposed in their naked colours; and when acquainted with their antecedents he usually sees in them only so many photographs of the depraved habits and sentiments of their predecessors; and this part of the subject cannot be concluded more appropriately than by referring to the Divine injunction, "Train up a child in the way he should go, and when he is old he will not depart from it," as embodying in the fewest words the great moral lesson to be derived from the consideration of voluntary actions, which, by habit, become involuntary.

ART. IX.—*Contributions to Operative Surgery.* By GEORGE H. PORTER, M. B. T. C. D., F. R. C. S. I.; Surgeon to the Meath Hospital; Examiner on Surgery, Royal College of Surgeons, Ireland; Lecturer on Clinical Surgery; late Member of Council, Royal College of Surgeons, Ireland; Member of Council, Surgical Society of Ireland.

I. A NEW MODE OF DELIGATING THE FEMORAL ARTERY.

II. EXCISION OF THE ELBOW-JOINT FOR COMPOUND FRACTURE.

I. MANY years ago my father suggested to several of his professional friends the adoption of an operation for the cure of popliteal aneurism, that appeared to be novel both in its mode of performance and the plan selected. Whilst engaged in investigating the pathology of this disease generally, he thought he had established the following facts:—First, that if a ligature is applied on an artery in any situation or part of its course, there is little or no danger of gangrene attacking the limb beyond it, the collateral circulation being always sufficient to support its vitality; but that, when mortification did happen, the occasional occurrence of which he was by no means prepared to deny, it was usually occasioned by the size of the tumour, or other cause obstructing the return of the venous blood, and, therefore (as he was wont to express it), there was more danger from the limb containing too much blood than too little. The very frequent and very successful ligature of the external iliac showed there was nothing compulsory in the selection of a part of the femoral beyond the profunda, in order to the limb being nourished, and that any other part of the trunk of the vessel might be selected with equal safety. Secondly, he had proved, at least to his own satisfaction, that the usually accepted local causes of secondary hemorrhage had really but slight influence: that it was of little importance whether the artery was extensively disturbed and separated from its natural connexions or not; or whether it was tied close to or at a distance from a collateral branch, provided such branch was at the cardiac side of the ligature, or whether the loop was tightly or loosely closed, or even whether the vessel was studded with specks of earthy senile degeneration, for he had witnessed and himself performed operations that were successful in despite of all these obstacles. He believed that hemorrhage arose more from constitutional than local causes; he used to state in his lectures that he had never seen an instance of it in a private family, or in a house where due attention was paid to cleanliness and ventilation; that in some hospitals it



was scarcely known, whilst in others it occurred with a harassing and perplexing frequency; and he showed that the inflammation which preceded and led to the hemorrhage was of the erysipelatous character, tending to ulceration, whilst that leading to obliteration of the vessel was adhesive. He professed, therefore, to feel but little apprehension of this formidable occurrence where the patient could be placed under satisfactory hygienic influences, and always, and in every instance, advised that no operation should be undertaken on any other conditions. But, thirdly, he regarded a wound or injury of the vein a source of great and often unavoidable danger in the operation as usually performed, and held the principle that no proceeding could be considered as safe and eligible, when such risk was incurred. In the second number of this Journal, for May, 1846, this part of the subject has been extensively discussed, and, therefore, it is needless to dwell farther on it here; but it may be observed that, if it be true that in the best hands, and with the greatest caution, not only may the vein be wounded, but that sometimes it is impossible to avoid it, and if the enclosure of a portion of that vessel within the noose of the ligature be inevitably fatal, surely the operation exposed to such contingencies cannot take a very high place amongst the resources of surgery. Actuated by these considerations, he proposed that the usual place selected for securing the femoral artery should be abandoned, and another chosen, which should at least be free from the last-named formidable objection.

After the artery has passed under Poupart's ligament, it lies quite superficial for nearly an inch of its course, accompanied by its vein, which is to its internal side, and just as superficial, and on a level with it. Any incision, therefore, by which this latter vessel could be endangered, must so far expose it to view as to render its avoidance easy, and any operation performed on this portion of the artery must be free from the objection above stated. Indeed, it is difficult to conceive how the vein could be injured, unless by the most absurd and culpable recklessness. But in this part of its course it gives off numerous branches, and the vicinity of any one, even of the smallest of these, would interfere with the formation of an internal coagulum, and with the subsequent process that ought to lead to the obliteration of the vessel. True, it does give off these branches immediately while passing under Poupart's ligament, or shortly afterwards; it gives off the circumflex ilii and epigastric, two large and important branches, quite sufficient to mar any operation, if this objection were really effective; but these branches would be above, or at the cardiac side

of the ligature, and experience proves that secondary hemorrhage does not take place in such situation. Moreover, there seems no reason for supposing that these branches would be more injurious in the case of a ligature placed below them, than would be the profunda in the old operation, which was always left above the cord in order to preserve the circulation of the limb. Lastly, the common carotid artery had been tied within a quarter of an inch of the bifurcation at the arteria innominata and the subclavian at the edge of the scalenus muscle; and, assuredly, if the presence of a large branch at or near the cardiac side of a ligature would prevent the obliteration of the vessel, such operations as these could scarcely have proved successful. But the femoral artery gives off, lower down, certain small and irregular branches—the external or superficial pudic, for instance—some of which must be below, or at the distal side of the ligature, the very situation where hemorrhage occurs, and where the presence of one ever so small may thus prove destructive. It may be so, but it has never been proved. On the contrary, where secondary bleeding has happened, the cause has always been in the ulceration of the artery at the ligature, and this, whether there was a collateral branch in the vicinity or not. There has been no lymph, no adhesive inflammation, no attempt at occlusion, although the space of an inch might intervene between the cord and the nearest branch, whereas in the many operations that have been successfully performed it seems impossible that all must have been so fortunately circumstanced as that not one should have had even a small or trivial collateral twig in the vicinity of the ligature at its distal side.

Supported by these considerations, it was suggested that the artery might be deligated safely and successfully at a point about half an inch below Poupart's ligament, where it lies superficial, where neither vein nor nerve could be exposed to danger, and where the collateral branches would be at a sufficient distance not to interfere with the subsequent process of obliteration, if such was really effective; and it was also proposed that the operation should be performed by a single incision parallel to Poupart's ligament, and of course transverse to the vessel, such incision giving the least disturbance to the artery in separating it from its adjacent connexions, and affording equal, if not greater facilities for passing the cord around it, and placing the wound in the most favourable position for healing subsequently. All that was required to insure success was, that the patient should be prepared for the operation for a few days by confinement to bed, a moderate diet, and gentle

aperient medicine; that he should be kept during the whole progress of the cure in a pure and wholesome atmosphere; and that, until the perfect cicatrization of the wound, he should observe the most absolute and perfect quietude. The importance of this latter condition will be made very apparent hereafter. At the time, however, these suggestions met with small encouragement. Few surgeons agreed in the pathology of the arterial system, and fewer still could be found willing to leave the beaten track, and adventure their own reputation and their patient's life on an operation wanting the sanction of experience. In the meantime, a case of popliteal aneurism was cured in the Richmond Hospital by mediate compression; another occurred in Jervis-street Hospital, and soon this method of treatment came to be ratified and confirmed by a course of success so unvarying and continued, that most surgeons began to regard the operation of securing the femoral artery as little more than a matter of bygone history, never more to be resorted to in the treatment of popliteal aneurism.

But in medicine there is no proposition universally true,—no mode of treatment applicable to every possible case. Doubtless, the operation of deligating the femoral artery at the usual place has totally fallen into abeyance, and probably has not been twice performed in Dublin during the last fifteen years, whilst the treatment by compression has been generally so successful, and has so entirely won the confidence of the profession, that very good and sufficient reasons would be required of any practitioner proposing to deviate from it. Such cases, nevertheless, must occasionally occur; sometimes the vessel may be so circumstanced that compression cannot be satisfactorily applied or maintained; sometimes the pain is so great (for it cannot be denied that the process is occasionally very painful) that the patient will choose any risk of operation rather than endure it; and sometimes we meet with persons so wayward and ungovernable, that no temporizing method can possibly be carried out with them. I have seen two cases in which, after compression had been tried, and failed, amputation was necessarily had recourse to, and in one of which the operation proved fatal. To meet such exceptional emergencies, the operation of taking up the femoral artery must be resorted to, and the sole question for discussion is, whether, in such eventuality, the operation I am about to describe is likely to be attended with less hazard than the old one, as performed in Scarpa's space. Perhaps the best description I can give will be a detail of the first case in which it was performed: I extract it from my father's case-book, and give it in his own words:—

John Neile, aged 40, by occupation a farmer, and of very healthy appearance, was admitted into the Meath Hospital, October 18, 1849, with a large pulsating tumour, occupying the middle and internal part of the right thigh, extending upwards to within a hand's-breadth of the groin, and downwards to within the same distance of the knee. Its measurement, both in the longitudinal and transverse directions, as far as could be ascertained, appeared to be about six inches; and the circumference of the affected limb, where the tumour was most prominent, three inches more than that of the other. Pressure on the artery, above, arrested the pulsation, and caused the tumour slightly to collapse, but it still remained very soft, and its contents were evidently quite fluid. There could be no doubt of its being an aneurism, and its history showed it to be one of no trifling importance. It appeared, that exactly six weeks previously, whilst sliding from a hay-stack, he struck on a pitchfork which had been left leaning upright against it, and wounded himself in the posterior part of the thigh, a short distance above the popliteal space: the wound, which was very small, and probably took an oblique direction, bled but little at the time, was not then, or subsequently, particularly painful, and was completely healed in three weeks, and (as he expressed it) he was as well as ever. About this period, however, when dressing one morning, a small, hard, painful, and pulsating tumour suddenly appeared in the middle of the thigh, about four inches above the cicatrix of the wound; it remained stationary, and of the same size, or nearly so, during the following twelve or fourteen days, when, from some sudden exertion, it began to increase very rapidly, and its pulsation to become more distinct. He then applied to a practitioner in the country, by whom he was advised to come to Dublin, where he arrived on the day of his admission into hospital. Although increasing so quickly as to threaten soon to become diffused, this was still a case of circumscribed aneurism, and therefore susceptible of cure on the principle of mediate compression; nevertheless, there was some hesitation in adopting that mode of treatment in this particular case. There was scarcely space, by any contrivance, for the application of two clamps on the trunk of the femoral artery. The superior border of the tumour was soft and badly defined, and it was possible that pressure applied on it might cause its rupture, and thus create the most unfavourable condition for future success. And, in the event of failure, it was dreaded lest the part which should afterwards be the seat of operation might be injured by the pressure. On the other hand, however, compression had been



so successful, and under such unpromising circumstances, that it was determined, in consultation, this poor patient should have the chance of any benefit to be derived from it, and accordingly, on the morning of the 19th, two clamps were applied, the pad of one directed immediately on the artery as it passes under Poupart's ligament, the other as closely as the shape of the instruments would permit below it, and the superior screwed down until the impulse of the artery was slightly imparted to it. He bore this with great firmness, although he said it was very painful, during an hour and a half, but on attempting to relieve him by tightening down the lower pad, it became manifest that our instruments were too imperfect to accomplish the object in view. Had the inferior been a ring-shaped clamp, it might possibly have succeeded; but, as it was, the broad posterior supports of the clamps interfered with each other, and by no contrivance could the operation of this lower instrument be maintained for two minutes together. It was worth remarking, also, that this instrument caused great pain, extending down the leg, and made the patient so restless and uneasy that he was constantly shifting himself, and thus rendering the pressure irregular and unsteady. In the face of these disadvantages the plan was persevered in, or perhaps it would be more correct to say, an attempt was made to persevere in it until evening, when it was of necessity abandoned, the pain being intense; the patient unable to bear the pressure of the superior for even ten minutes, and, what was of more importance, the tumour restrained in its growth superiorly, was extending rapidly down the thigh, in which direction it had increased more than an inch since morning. All the instruments were removed, and the patient, exhausted with so much suffering, had a tolerably tranquil night.

On the morning of the 20th the femoral artery was secured in the following manner:—

An incision, about an inch and three-quarters in length, was made *across* the direction of the artery, at the distance of half an inch below Poupart's ligament, and exactly parallel to it; this first incision very nearly exposed the vessel sufficiently, only a few touches of the knife being required to free it from its connexions, and allow the needle to be passed easily around it. Scarcely a teaspoonful of blood was lost, and he seemed to suffer very little until the moment the ligature was tied, when he complained of a pain shooting down the entire limb to the foot; it was, however, only momentary. On the artery being secured, the wound was closed with a strap or two of adhesive plaster, the limb bandaged with a flannel roller, and the

patient replaced in bed; the whole operation having occupied an incredibly short space of time.

The course of such cases, when they end favourably, is so well known that a minute detail of the progress of this one would prove insufferably tedious. It must be confessed that no little anxiety was felt for the results of a new operation, performed in somewhat a novel manner, and there was good reason for apprehension that the tumour would ultimately suppurate, as it was scarcely to be conceived that the absorbents could remove such a mass of blood; yet all these anticipations were most agreeably disappointed: the size of the tumour diminished sensibly from day to day, as ascertained by actual measurement; the sensibility and temperature of the limb were perfectly natural; the functions so regularly performed, that during the entire treatment the patient never required a grain of medicine; the only complaint he made was of confinement to the one position, which, however, he endured with the greatest patience.

On the morning of the nineteenth day the ligature came away, but the patient was kept in bed for three weeks longer, with the view of avoiding any possible irritation of the tumour, which might cause it to inflame and suppurate; but such precaution was probably unnecessary, for he never throughout the entire time showed an unfavourable symptom. He left the hospital on the 6th of December, having perfect use of his limb in every respect; the tumour being hard, firm, and unyielding, and reduced in size to that of a large walnut.

This operation was witnessed by many surgeons; it is noticed by Mr. Tufnell in his valuable Treatise on Aneurism, and the principle seems to have been adopted and acted on by my distinguished friend, Mr. Butcher, in a case of wounded artery, as detailed by him in the thirty-fifth Number of this Journal, for August, 1854. The same operation has been performed twice since by my father with very satisfactory results, but it would be both tiresome and useless to repeat the details, and I proceed at once to the history of the cases which have given occasion to the present remarks.

Daniel Downey, aged 29, of rather intemperate habits, was admitted into the Meath Hospital January 9, 1860. Just a week previously he had been working an engine during an entire night in endeavouring to extinguish a fire, and perceived on the following morning a small pulsating tumour on the internal and inferior part of the right thigh, which must have increased rapidly, as in this short time it had reached a very large size, measuring six inches in length, by three and a half

in breadth. It was soft, its contents evidently fluid; the pulsation violent, and pervading it throughout, and the *bruit de soufflet* particularly distinct. In other respects the patient appeared healthy.

January 11th. Two clamps were applied on the course of femoral artery, one of which was screwed down so as slightly to control the pulsation of the tumour; he bore the compression well, although he said it caused great pain, and it was kept up with tolerable constancy until the 20th, when it was remarked that the aneurism had become more solid, and the force of the pulsations diminished. The patient now became more unmanageable, and occasionally insisted on having the clamps relaxed or taken off; the tumour increased in size, and extended particularly in the direction of the popliteal space, but the pulsation diminished, and by the 27th (sixteen days from their first application) the instruments were removed altogether, pulsation having ceased.

February 2nd. The tumour had increased in size, become somewhat discoloured on its surface, and in two or three places afforded a distinct sense of fluctuation; it was evidently about to suppurate; but as the condition of the artery in connexion with it was uncertain, it was determined to watch the progress of the case carefully, but not to interfere actively with it. On the 13th the wisdom of this determination became apparent, for a strong and decided pulsation returned in the tumour, and it was plain that the vessel was still open, and communicating with the sac. In consultation it was considered that the patient's safety lay between amputation on the one hand, and ligature of the artery on the other, and I decided on giving him the chance of preserving the limb. On the 14th I performed the operation as recommended by my father; a transverse incision half an inch below Poupart's ligament, and about an inch and a half in length, quickly exposed the vessel, which was as quickly enclosed in a ligature. There was no bleeding, no pain, except at the moment I tightened the cord; no necessity for the use of chloroform; the whole procedure occupied but a few minutes, when the man was replaced in bed, with the limb in a semiflexed position, merely supported on a pillow under the knee, and covered with flannel. On the tightening of the ligature the tumour collapsed, and continued daily to diminish in size, although it remained soft, and ultimately required to be treated as an abscess, and in every respect the case progressed even more favourably than could have been expected from its early history.

Two circumstances in connexion with it are, however, es-

pecially worthy of observation. The wound at the groin did not heal as kindly as could have been wished; it became surrounded by a blush of inflammation, suppurated very abundantly, and showed little disposition to granulate: the ligature, however, remained firmly on the vessel until the 20th day (which is, I believe, a most favourable symptom), and then came away in the dressings. On the 9th March, twenty-five days after the operation, during a violent paroxysm of coughing, which shook the patient's entire system, blood gushed out from the wound, and he lost a considerable quantity. It was of a florid colour, flowed briskly, and appeared to come with some impetus. Mr. Townsend, our intelligent resident pupil, believing that it came, as it generally does, from the distal segment of the vessel, applied pressure below the margin of the wound without any benefit; he then compressed above, and all hemorrhage was at once commanded. It was evident the coughing had broken the thin and delicate layer of lymph that was about to close the vessel, which would be again replaced, and therefore there was but little cause for apprehension. Such was the fact; for although he bled a little on the occurrence of another fit of coughing in two days afterwards, in both instances it was easily commanded by gentle pressure, and in the end the wound healed kindly, and no case could have terminated more favourably.

With respect to the tumour, it was just as fortunate. In general a suppurating aneurismal sac forms a most unhealthy, unmanageable abscess, and many a limb, and indeed many a life, has been lost by its occurrence; but here it was happily quite the reverse. The sac was allowed to remain untouched until it seemed to be on the verge of bursting; it was then opened by a free incision, fully three inches in length, and an immense quantity of dark coagulated blood turned out, mixed with serum, and a comparatively small proportion of purulent matter. The cavity being completely emptied, its walls were laid down, retained by a very moderate degree of pressure, and so favourably did the case proceed, that the patient was up about the ward within a fortnight, and able to leave the hospital within a month after the sac had been opened.

CASE III.—William Edwards, aged 40, admitted into the Meath Hospital on the 24th June, 1860, under the care of Mr. Smyly.

Eight or nine months previously he had noticed a small pulsating tumour in the left popliteal space, about the size of a walnut. He knew not what had occasioned it; and as it was not painful or inconvenient, gave but little attention to



it. On the 17th, a week before admission, he struck his leg against a cistern, when it began to swell, became exquisitely painful, and assumed the appearance it then presented. There was a large aneurism occupying the popliteal space, and extending upwards on the thigh; the leg was swollen, dark-coloured, and slightly œdematous; the skin of his leg thick and coriaceous, extensively marked with the cicatrices of former ulcers, and evidently unhealthy. In all other respects the patient's appearance was rather favourable. Immediately on admission mediate compression was adopted, and the clamps placed on the course of the femoral artery. They occasioned great pain, and such swelling of the limb that it was supposed the vein was compressed; and after being endured for three days, the instruments were abandoned, and digital compression substituted. It was soon found, however, that this mode of pressure was still more intolerable than the instrumental, and after a short trial the latter was again had recourse to; but after bearing this two days longer, the pain became so intense, and the aspect of the limb so alarming, that pressure of every kind was laid aside, and it was evident that (if at all) the limb could only be saved by operation. It was a most unpromising case. The tumour was large, and would probably suppurate; there could be no doubt it compressed the vein; the limb was already œdematous, and its appearance altogether unhealthy. Nevertheless, the loss of a leg is a terrible infliction to a person obliged to work for his livelihood, and Mr. Smyly resolved to endeavour to preserve it.

June 29th. The operation of deligating the femoral artery was performed in the manner and at the place already described, after which the limb was wrapped in flannel, warmth applied to the foot, and the most absolute rest enjoined. This treatment was persevered in, but the tumefaction never subsided; on the contrary, in a few days the foot swelled still more, became dark-coloured, and very painful, and on the 5th July vesications made their appearance on the dorsum of the foot; on the 6th Mr. Smyly made an incision into the mortified spot, which afforded much relief.

July 9th. On reaching for a vessel at some distance from his bed, he outstretched himself, and some blood flowed from the wound; its source could not be ascertained, and it was easily commanded by gentle pressure.

13th. The ligature came away; the tumour has become firm, and greatly reduced in size; the sloughing on the dorsum of the foot has ceased, and the mischief is limited to one ulcer, in which some of the tendons are unfortunately engaged.

He is, of course, very weak, and requires wine and nourishment, but in other respects is going on favourably.

April 1st. The patient is advancing rapidly to recovery, the wound of the operation healed, the aneurism greatly diminished, and quite solid; the only inconvenience he has to struggle against being the ulcer on the foot, which as yet shows little disposition to heal, and his strength is perhaps not as satisfactory as could be desired. He is still on full diet, and gets wine and porter.

August 19th. The report is—"The aneurism is quite cured." "There is still an ulcer on the dorsum of his foot, but his general health is very good, and he is fast recovering strength."

I confess that the point of interest which has induced me to publish these cases, and to which I wish to direct the attention of the profession, has reference to the question of secondary hemorrhage, that object of terror to all operators, and which has really proved such an obstacle to success. All surgeons of the present day believe that the vicinity of a collateral branch (however small) to the ligature, vitiates the process of union by preventing the effusion of agglutinative lymph; and, as far as I know, this is the only objection that can be raised to the principle of those operations I have just detailed. Mr. Erichsen, who may well be accepted as the exponent of British Surgery, in his splendid work, "*The Science and Art of Surgery*" (London, 1853), when treating of tying the femoral artery between the inferior edge of Poupart's ligament and the origin of the profunda, says:—"Of twelve recorded cases, in which this artery has been tied, it would appear that three only succeeded, whilst in the remaining nine instances secondary hemorrhage occurred, which proved fatal in three, and in six was arrested by the ligature of the external iliac. This operation, I think, therefore, ought to be banished from surgery; and in all those cases of aneurism that are situated above the middle of the thigh, and in which sufficient space does not intervene between the giving off of the profunda and the upper part of the sac, for the application of a ligature to the superficial femoral, the external iliac should be tied, unless compression can be employed."

Certainly it requires no little confidence to question a doctrine thus authoritatively advanced, and universally received. But I must remind my readers, that up to this moment the operation on the femoral artery in this locality has always been exceptional, never adopted through choice—never resorted to unless when some strong objection existed to the selection of

Scarpa's space, which objection may be admitted as adverse, more or less, to the success of any operative proceeding. And in the cases alluded to by Mr. Erichsen, as far as I have been able to analyze them, this remark is fully borne out. Again, in the recorded cases of hemorrhage, I do not find any one instance proved to have been occasioned by the vicinity of a collateral branch; such vicinity may have existed, and probably did, but its injurious influence has in no case been demonstrated. As far as I know, destructive consecutive hemorrhage is always accompanied by the presence of unhealthy ulcerative inflammation and the absence of lymph; but I am not aware that these results have been traced to the presence of a collateral branch. It is very true, that when such branch exists, there will be no coagulum of blood within the vessel. Its absence may have originated the idea that the cause which prevented its formation, also prevented the deposition of coagulating lymph, but certainly the two results can have no connexion; and that they have not, is, I think, fully proved by the cases just related. There can be no question that two large collateral branches lay closely above the ligature, and that a layer of lymph was formed nevertheless. This lymph was so thin that the pulsation of the trunk of the vessel could be felt into the very wound, and so weak that it yielded and broke under the excitement of a violent cough, and permitted the escape of a considerable quantity of blood. This took place in both instances, but the lymph was adhesive and healthy, the bleeding easily controlled by slight pressure, and perfect recoveries the result. So long back as the year 1813, Mr. Travers noticed that "secondary hemorrhage sometimes results from the laceration of the young and tender cicatrix;" but, says he, "this is not to be classed amongst its natural causes." Now, if this can happen at the cardiac side of the ligature, when the young and tender cicatrix has to meet and stem the full stream of blood under the strong power of the heart's action, why may not the same happen at the distal side, or why should a collateral branch have an influence in one situation which it clearly does not possess in the other. The answer probably is, that the cause of the hemorrhage is not in the presence of the collateral branch, but in the kind of inflammation set up in the vessel; it is plastic, where it is to be obliterated; it is erysipelatous and ulcerative, where it bleeds. I am quite aware how little reliance can be placed on experiments on the lower animals for the elucidation of human pathology, and especially with regard to the arterial system; nevertheless, there is one circumstance that seems to bear

strongly on this point under consideration. I do not believe it possible to produce secondary hemorrhage in the inferior animal. We may ligature what vessel we please, and where we please, near to or at a distance from a collateral branch, and either above or below it, and the result is always the same, the perfect closure and obliteration of the vessel. But the inflammation in the lower animal is always healthy, always plastic; and whenever in the human subject it bears the same character, I believe it carries the same result. If this be the case, then, and it is a question of pathology which any inquirer may determine for himself, it will remove the chief, if not the only objection to an operation which is in other respects simple, comparatively safe, and easy of performance, free from pain and bleeding, and in which a wound of the vein is well nigh impossible. It is not pretended that secondary hemorrhage will not occur; to be sure it will, but not in this case more frequently than in any other, not from the cause to which it has been most frequently attributed, and certainly not in a more hopeless and irremediable form than where the artery is more deeply placed, as it is in the old operation. I have added two sketches, which illustrate the principal features of this operation.

## II.—*Excision of the Elbow-joint for Compound Fracture.*

Until of late the implication of a joint by compound fracture was considered quite sufficient to condemn the injured limb to amputation. But "Conservative Surgery" now steps in, and suggests a milder and more scientific measure, to save (certainly not a perfect), but, in the majority of cases, a very useful member. Although excision of the elbow-joint has been for years an established procedure in cases of diseased bone, yet I believe it has not been performed in many cases for accident, at least I cannot find on record the particulars of any that may have been done; I therefore consider the following case will in some degree prove interesting to the practical surgeon, as illustrating in a marked manner the benefit arising from this operation in a case of compound fracture opening the articulation:—

George Thompson, aged 35, by occupation a house-painter, and of very intemperate habits, was admitted into the Meath Hospital on the 7th of January, 1860. The history of the accident was briefly as follows:—

He was standing on a ladder about ten feet in height, and engaged in painting a sign-board, a drunken man passing at the time staggered against it, and upset the patient; he came



...country were a constant source of interest  
 to him when there; and he had an intense enjoyment of  
 scenery, although able only to see it with the aid  
 of powerful opera-glasses. His aneroid was at all  
 times his inseparable companion; indeed, he was rarely  
 to be seen anywhere a couple of miles from home, even in  
 London, without the aneroid in his pocket. She who knew  
 him best can truly speak of his fine temper; of his pas-  
 sionate love of truth and justice; of his indignation  
 against all shams and false pretences; of his goodness and  
 gentleness in private life; of his perfect and remarkable  
 freedom from all malevolence and jealousy; or of his free-  
 handed generosity in giving every man his due, and more  
 than his due, for honest, conscientious work; of his keen  
 appreciation of humour, and the fund of quiet  
 good-natured irony in himself, and of his warm and hearty  
 fidelity as a friend. And this was combined with singular  
 humility and modesty. No one ever heard Lord Strang-  
 ford say one word which could be construed into a boast of  
 himself, or a claim for his own acquirements; on the con-  
 trary, he was always ready and anxious to learn from  
 others, with a frank avowal of his own ignorance. When  
 in company with those who felt themselves his inferiors in  
 knowledge, he hung back, rather than led; while to those  
 who sought for information from him he poured out all  
 from his own stores with lavish kindness. But this  
 excessive mental activity was too much for Lord Strang-  
 ford's feeble body. He was attacked at the end of July  
 with a slight and partial paralysis, the effect of over-  
 fatigue, but from this he appeared to have completely  
 recovered, when, on the morning of the 9th of January, an  
 effusion of blood took place on the brain, and he breathed  
 his last in a few hours at the early age of 43 years.  
 What our society has lost by this sad and unexpected  
 event is deeply felt by us all: but I must add that my  
 grief on the occasion has been greatly augmented by  
 the deep sympathy I feel for his widow, the daughter  
 of that beloved and sound geographer, the late Ad-  
 miral Sir Francis Beaufort.  
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solicitors, Oldham; or to Messrs. COBBETT, solicitors, 61, Brown-street, Manchester.

Derbyshire.

By Mr. GEORGE MARSDEN, at the Bell Hotel, Sadler Gate, Derby, on Wednesday, the 2nd day of June, 1869, at three o'clock in the afternoon precisely, in the following such other lots may be determined upon at the time of sale, and subject to condition to be then produced.

## VERY Valuable FREEHOLD and COPYHOLD

ESTATES, situate at Brailsford and Culland, in the parish of Brailsford, and Ashleyhay, in the parish of Wirksworth, in the county of Derby, comprising several Capital Farms, with Homesteads, a well-accustomed Roadside Inn and Accommodation Crofts, containing together 348 acres 3 roods and 32 perches or thereabouts:

Lot 1. In Brailsford.—All those TWO Excellent FREEHOLD FARMS, Farm Homestead, a well-accustomed Roadside Inn, Twelve Cottages, Beerhouse, Blacksmith's Shop, Accommodation Crofts, Orchards, and Gardens, situate in the village of Brailsford, containing together 194 acres 1 rood and 36 perches or less, in the respective occupations of Mr. Gilbert Mosley Soresby, the devisees of the late Mr. James Webster, Mr. William Bennbrigg, and others. The tithe upon this lot has been commuted at the sum of £26 14s. 7d.

Lot 2. In Brailsford.—All that CLOSE or PARCEL of FREEHOLD ARABLE LAND, situate on the east side of the road leading from Brailsford to Hulland, known by the name of Bricks-kiln Field, in the occupation of the said Gilbert Mosley Soresby, and containing 4 acres 1 rood 8 perches, or thereabouts. The tithe commutation rent-charge amounts to 6s. 8d. per annum.

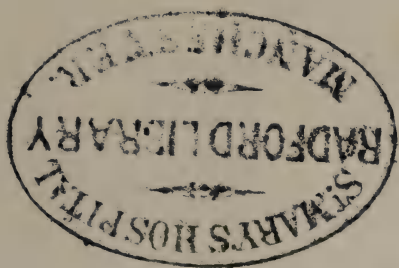
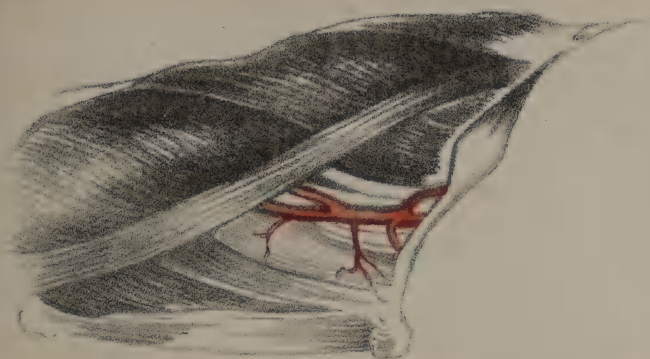
Lot 3. In Brailsford.—All those TWO CLOSES of PASTURE and ARABLE LAND, lying to the north-east of lot 2, near to the road leading from Hulland to Mercat-ton, called or known by the names of Middle and Top Far Ground, and First Top Far Ground, containing 7 acres and 12 perches, 5 acres 3 roods 16 perches respectively, more or less, in the occupation of the said Gilbert Mosley Soresby. The tithe upon this lot has been commuted at the sum of £1 5s. 5d.

Lot 4. In Brailsford.—All that valuable FREEHOLD FARM, with farmhouse and premises thereon, situate at Culland, in the parish of Brailsford, known by the name of the "Culland Farm," and comprising 112a. 2r. 35p. or thereabouts, of rich arable, meadow, and pasture land, in the occupation of Mr. Thomas Dakin. The tithe commutation rent charge amounts to the sum of £14 16s. per annum.

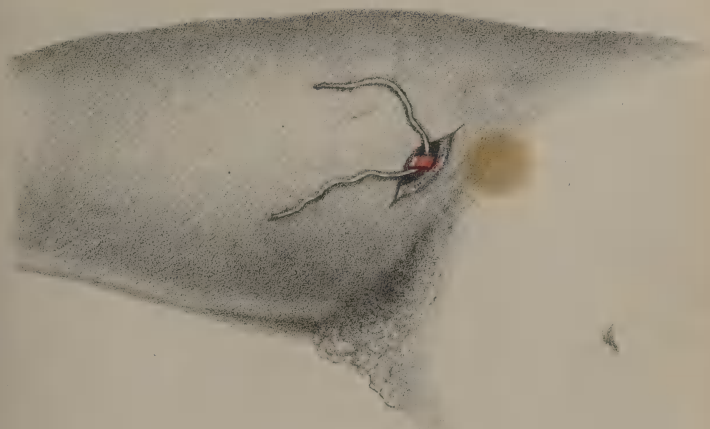
Lot 5. In Ashleyhay.—All that FARM, consisting of arable, meadow, and pasture land, with the house and buildings thereon, situate in the township of Ashleyhay, in the parish of Wirksworth, containing 30a. 1r. 4p., more or less, in the occupation of William Kay or his undertenant. The tithe upon this lot has been commuted at the sum of £4 16s. 3d.

Lot 6. In Ashleyhay.—All those TWO CLOSES or PARCELS of ARABLE LAND, lying near to Lot 5, consisting of 4a. 1r. 1p., or thereabouts, in the occupation of William Kay or his undertenant. The tithe upon this lot has been commuted at the sum of 12s. 5d.

*Fig. 1.*



*Fig. 2.*







to the ground on his left elbow, which received a compound fracture. When I visited him in half an hour after, I found him suffering great pain, and very much collapsed; the joint on examination presented considerable swelling, was unnaturally movable in all directions, and gave the sensation as if the part were filled with a number of small pebbles. There was a transverse wound one inch in length above the joint, and towards the outside, through this, I distinctly felt the broken humerus, and, on introducing a probe, considered that it passed directly into the cavity of the articulation. In consultation with my colleagues, it was decided to enlarge the wound, examine the state of the parts, if the joint was safe, merely to remove any loose portions of bone, but, if otherwise, to excise the articulation, and try to save the limb. Accordingly, having had the patient put thoroughly under the influence of chloroform, I made an incision five inches in length along the centre of the posterior aspect of the elbow, extending an equal distance above and below the articulation; this brought into view the transverse fracture of the humerus, just above the condyles; and on closer investigation I discovered a second fracture passing between the condyles into the joint. I then sawed off with a narrow-bladed saw the broken extremity of the humerus, and having made another incision an inch and a half in length from the middle of the former one towards the external condyle, severing the attachment of the triceps muscle from the olecranon, I seized the internal condyle in a strong forceps, and carefully dissected it out, all the time keeping the knife close to the bone; in like manner I removed the external condyle. My assistant now forcibly flexed the fore-arm on the arm; I then cleared the soft parts from the olecranon process of the ulna and head of the radius, and rapidly sawed them off. It is curious that throughout the entire operation I did not see the ulnar nerve; scarcely any blood was lost, two small arteries only requiring ligatures. The edges of the flaps were now brought evenly together, and retained by four points of silver-wire suture; the dressing consisted in applying wet lint to the wound, and bandaging the limb on a carefully padded rectangular splint; he was then placed in bed, felt quite cheerful after the operation, and expressed his gratitude for leaving him his arm. Ordered twenty drops of Battley's sedative liquor of opium.

January 8th. Had a good night, only complained of some slight twitching in the fingers. Pulse 80; tongue a little furred; no thirst. Ordered an aperient draught.

9th. Passed a quiet night; bowels not moved; water-dress-

ing applied to the wound, which looks healthy. To get a purgative bolus, beef-tea during the day, and the anodyne at night.

10th. Not so well to-day, very restless, and complains of headach; bowels freely moved.

11th. Feels worse this morning; was attacked by a severe rigor during the night, but obtained relief by the application of jars of warm water to his feet, and an anodyne draught containing twenty drops of Battley's sedative liquor; copious discharge of healthy pus from the wound, which was dressed with the usual water-dressing.

12th. Is much better to-day; had a very tranquil night. Tongue clean, bowels free. I this day removed the splint, and laid the limb in a rectangular box, resembling that recommended by my friend, Mr. Butcher, in the "Dublin Quarterly Journal" for February, 1859; and here I must bear testimony to its great utility in keeping the parts at such perfect rest, maintaining the limb in its proper position, and at the same time allowing the dressing of the wound to be completed with the utmost facility to the surgeon. I consider it in every respect a most ingenious and important apparatus for the treatment of these cases. Ordered four ounces of wine.

14th. Says he feels stronger; pulse 65; tongue clean; wound healthy-looking. Ordered a chicken. Two of the sutures came away this morning.

17th. No change since last report; he is daily gaining strength. Same treatment, and dressing continued. All the sutures out, the wound granulating in a healthy manner, and discharging less.

22nd. Somewhat feverish to-day; had a rigor last night, which lasted only a short time. Bowels confined, tongue white; complains of thirst; there is a slight blush of redness at the lower end of the wound. Ordered two grains of calomel in a pill, and a cathartic draught in three hours after; to have some jelly; to take bark in effervescence; a poultice to be applied to the elbow, and to have his wine as usual.

January 24th. Much improved in every way; redness quite gone; treatment to be continued as before.

30th. Nothing remarkable to mention since last report; has gone on in every particular most favourably; the splints and pads were from time to time readjusted.

February 5th. Wound healing well; the discharge has now nearly ceased; allowed to sit up in bed, the box and limb being well raised, and supported by pillows.

9th. In every respect going on well; the box laid aside;

I now made a light case with brown paper and starch, which reached from the shoulder to the wrist; its construction was exceedingly simple; having put strips of lint evenly over the limb, I placed three or four successive layers of strong brown paper softened in warm water, and afterwards smeared with starch over the lint; this all became dry in a few hours, and thus was formed a convenient, strong, and at the same time resisting support for the arm. An aperture, if required, for any corresponding sore or wound may be cut out with "Seutin's pliers," and the whole lined with chamois.

10th. The paper mould being perfectly dry and solid, I put the limb in a sling, and permitted the man to get up for the first time; he moves the fingers and wrist-joint with surprising freedom.

20th. Removed the paper splint; the limb was allowed to fall nearly into the straight position; the patient has no power to flex the forearm on the arm, but the parts about the elbow have a firm feel, as if they were becoming condensed; I this day tried the application of a new splint for cases of excision of the elbow-joint, invented by Mr. Christopher Heath, of London; it is certainly remarkably light-looking, and displays ingenuity in its constitution, but I was not able to continue its use; my patient could not bear it more than four hours, when he became most solicitous for its removal, saying it gave no support, the whole limb below the splint was found very much congested and swollen. I cannot, therefore, from the experience of it in my case, recommend it to others; I consider it would not be possible to apply it with sufficient firmness, without interfering with the circulation to an unpleasant degree; the paper case was again put on the arm in the evening, when the tumefaction had subsided.

March 1st. There was nothing of interest to note since last date; he is now looking in fine health, all his functions acting normally; he walks daily in the grounds of the hospital, and is able to grasp small objects, and lift them with the left hand. The wound is almost healed; the granulations of the transverse incision, being rather large and flabby, are touched every day with nitrate of silver.

12th. Wound quite healed; the splint taken off daily for some hours, and the arm merely supported in a strong sling; by giving him a little assistance, he now had the power of flexing the forearm on the arm in a great measure, and, when the limb was in the extended position, was able to pull towards him comparatively heavy objects. Nothing worthy of recording occurred from this date until he left the hospital on the

16th of April, at which period his arm was every day becoming stronger. He returned to let me see him at the end of June, when I found him possessing a very useful limb; he had the power of flexion to a great extent, and told me he was able to use the arm on many occasions in his wonted employment.

This case, then, I trust I may be permitted to consider had a most satisfactory termination, and affords a striking example of "conservative surgery." The accompanying lithograph exhibits faithfully the damage done to the articulation and the shaft of the humerus, as also the amount of bone removed in the operation.

ART. X.—*Pathological Researches*. By B. WILLS RICHARDSON, F. R. C. S. I., Member of the Court of Examiners of the Royal College of Surgeons in Ireland; one of the Secretaries to the Surgical Society of Ireland; Surgeon to the Adelaide Hospital.

(Continued from vol. xxviii. p. 322.)

8.—AMPUTATION AT THE KNEE FOR CARIES OF THE TIBIA COMMUNICATING WITH THE INTERIOR OF THE ARTICULATION: PERFECT RECOVERY.

WILLIAM UDHE, aged 20, a performer in an itinerant band, was admitted into the Adelaide Hospital on the 2nd of November, 1859.

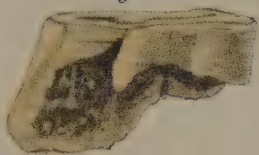
Some six months before admission, he accidentally received a severe kick on the head of the right tibia, from a man jumping off a cart. He was able to walk with his comrades for some time afterwards; but he cannot give the date of the subsequent swelling of the limb or knee.

In May last, he was so incapacitated from walking, in consequence of the affection of the knee and leg, that he was obliged to enter the Athlone Workhouse, where some pieces of exfoliated bone were discharged through fistulous openings in the anterior and upper part of the tibia. He remained in the hospital of that institution until the present month, when he was brought to Dublin.

*Present Symptoms*.—The greater portion of the right tibia is much diseased, with fistulous openings in its head. Through these apertures can be felt the exposed and carious bone, which is so soft, that the probe passed with slight force in any direction, either upwards almost into the joint, or downwards to the



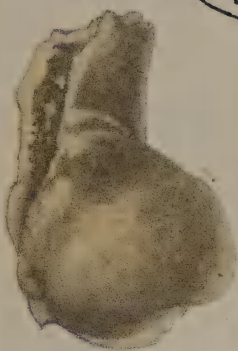
*Fig. 1.*



*Fig. 2.*



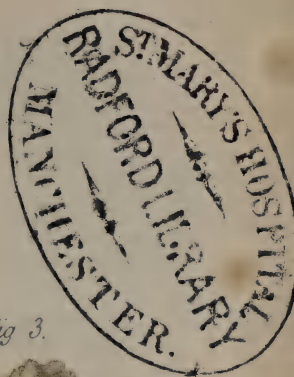
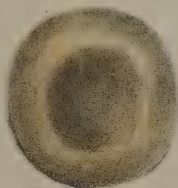
*Fig. 3.*

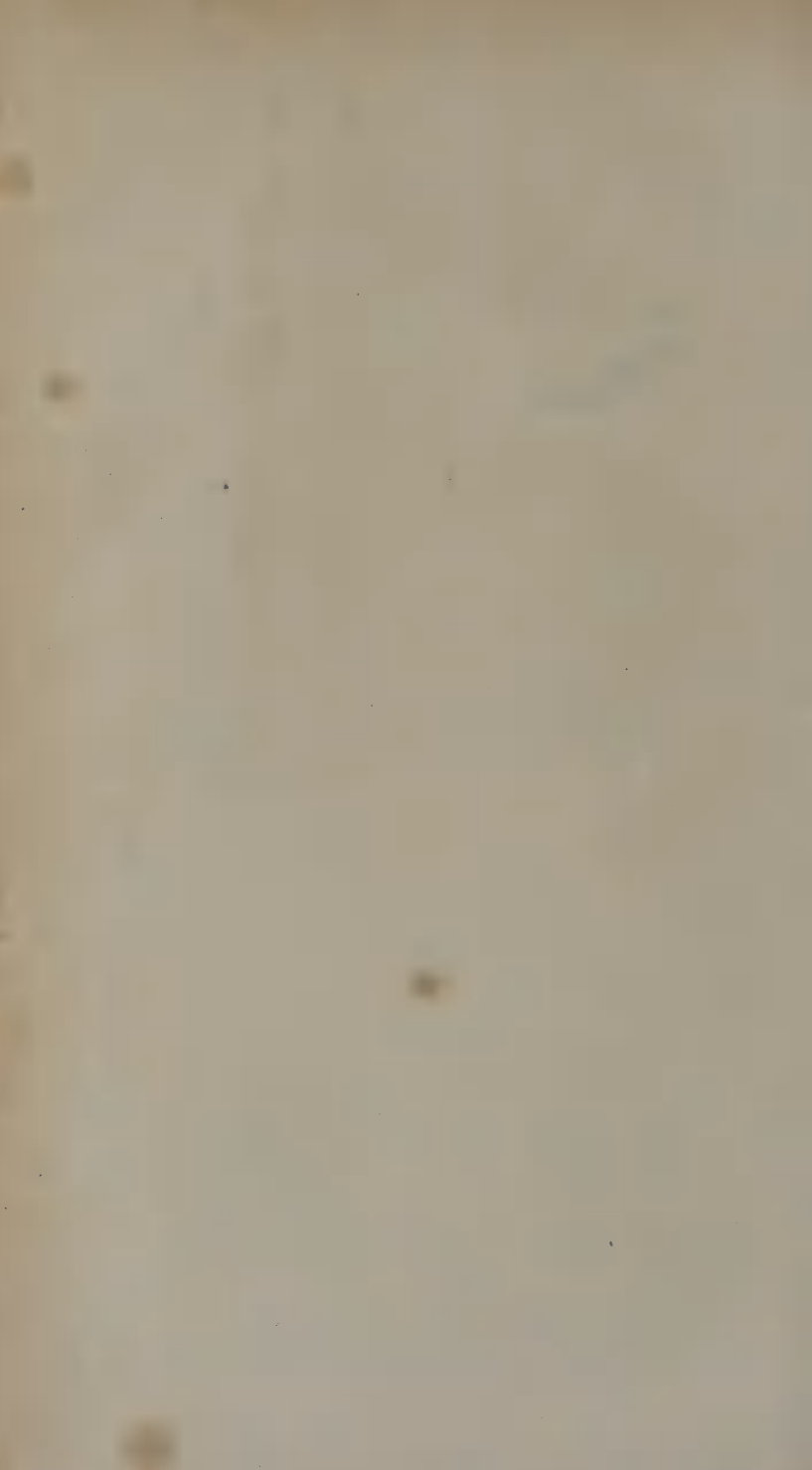


*Fig. 4.*



*Fig. 5.*





shaft of the bone. We could not, however, find any opening directly into the joint, although we suspected the presence of such. There was a projection from the outer condyle of the tibia, but it was perfectly fixed, and covered with apparently healthy integument. The knee-joint was much swollen, but not painful; neither was pain caused in it by pressing the heel, nor by moving it freely, although it permitted excessive lateral and rotatory motion. There was no shortening of the limb, but both bones of the leg were dislocated slightly outwards; skin hot; pulse 104 to 120, weak; appetite good; bowels natural; urine free from albumen, and deposited urate of ammonia copiously. He was put upon good diet, cod-liver oil, and syrup of iodide of iron, wine, &c. The leg was placed on a double inclined plane; and, from time to time, alterations in position and local and general treatment, were had recourse to, but without any amendment in the symptoms. His constitution now gave evidence of greater sympathy with the disease, and he became more pressing in his wish to have the limb removed. In consultation we agreed on amputation; and I determined to perform the operation at the knee, opening into the joint, and being guided by the state of the femur as to whether we should amputate higher up.

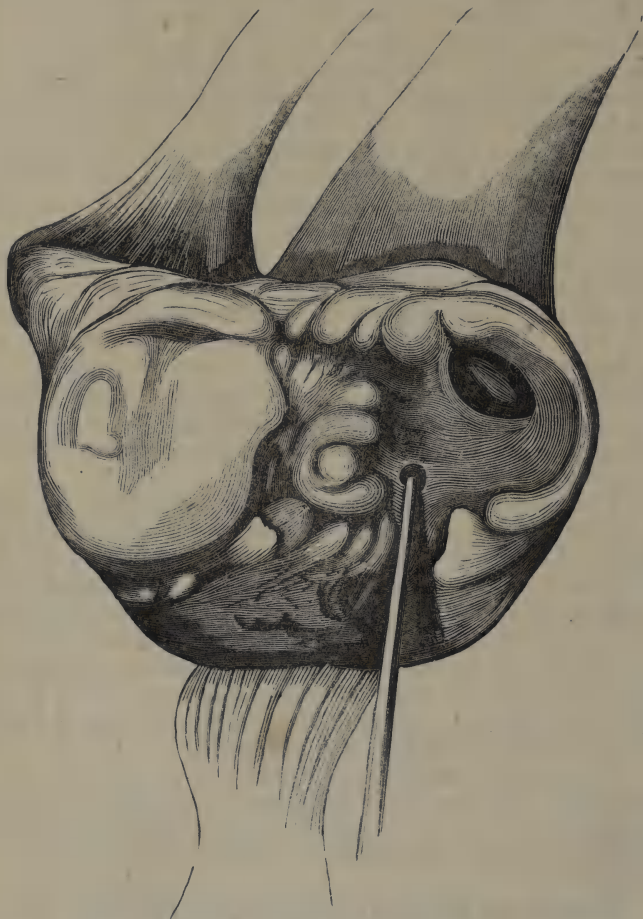
The operation was performed on the 22nd February, 1860, the patient being under the influence of chloroform. The proceeding I followed was that recommended by Mr. Syme. The tourniquet having been applied, so that the femoral artery might be compressed just at the opening in the adductor magnus,—an anterior semilunar incision “on a line with the lower edge of the patella” was then made; the skin, &c., was raised from the latter, and the joint was opened into; a long flap was then made from the calf of the leg; lastly, the condyles of the femur were sawn through, and removed.

During these proceedings it was observed that the crucial ligaments, both semilunar cartilages, as well as the investing cartilage of the femur and patella, had disappeared, and likewise that the synovial membrane was remarkably red and vascular.

Scarcely any blood was lost during the operation. We did not see the popliteal artery. Three or four vessels only required ligature: the largest at right angles to the face of the posterior flap, and, being in the situation of the origin of the anterior tibial, I presume was that vessel. With the exception of some sickness of stomach, there was not an unpleasant symptom, and the wound was perfectly consolidated on the 19th of April following.

The accompanying illustration represents the carious, roughened, and irregular state of the head of the tibia; and

Fig. 12.



the probe shows the situation of the opening into the joint. The posterior aspect of the bones is upwards.

On making a vertical section of the tibia, more than half the bone was found infiltrated with a tubercular cheesy-looking matter. This portion of the shaft was quite soft, and cut rea-



dily. We did not find any sequestrum in the head of the bone.

Unfortunately the patient is a remarkably stupid boy, a German, or the previous history of his case would have been more complete. I am inclined to think that the injury of the tibia was followed by strumous action in the osseous tissue, and that possibly a small abscess formed in it, which subsequently opened into the joint, causing destructive disease of the articulation.

My principal object in recording this case is for the purpose of adding to our statistical information relative to amputation at the knee, an operation which is at present engaging much of the attention of the profession. So far as this case goes, it is in favour of Mr. Syme's modification, as the stump turned out a very good one, and, when he left the hospital, bore pressure well. Surgeons differ, however, as to the best mode of performing the operation,—some dispensing with the large posterior flap, and the removal of the femoral condyles. In addition to the proceeding followed in this case, we have also the modification of Beclard, Rossi, Velpeau, Pancoast<sup>a</sup>, Lane, and probably others. Mr. Lane “makes a large anterior cutaneous flap in front of the joint, right down to the insertion of the ligamentum patella, which is then reflected upwards, the knife being carried through the joint. A small posterior flap is then made, so that in the process of healing it shall draw the anterior flap over the articular surface. The patella is retained, and forms a round and smooth surface to rest upon, as in the flexed knee, the skin being likewise movable over it, as in the healthy joint”<sup>b</sup>. In one of the cases lately recorded by Mr. Fergusson, he “made flaps of equal length, which met below the condyles, the patella being removed, and none of the articular surface being taken away”<sup>c</sup>. Unfortunately, a fatal result ensued.

In case the surgeon imitate the proceeding of Mr. Syme,—the operation performed in this case,—it is of the greatest consequence that his advice should be followed in making the posterior flap “to the full extent of the fleshy part of the gastrocnemii muscles, care being taken, however, to avoid preserving more than a moderate portion in regard to thickness”<sup>d</sup>. The muscles were, however, so wasted in Udhe's case we thought it best to keep close to the bones, which accounts for our not seeing the popliteal artery during the operation.

<sup>a</sup> Fergusson's Surgery.

<sup>b</sup> Braithwaite's Retrospect, vol. xli.

<sup>c</sup> Ibid.

<sup>d</sup> London and Edinburgh Monthly Journal of Medical Science, May, 1845, p. 537.

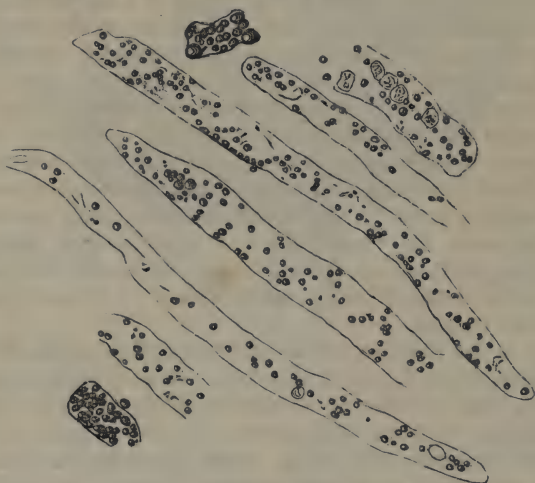
9.—DISCHARGE OF ENORMOUS QUANTITIES OF THE SO-CALLED OILY AND WAXY CASTS IN THE URINE; RAPID FATTY DEGENERATION OF THE KIDNEY.

George Armstrong, aged 18, a telegram clerk, admitted into the Adelaide Hospital, in May, 1860.

He states that four weeks previous to admission he was attacked with dull pain in the lumbar regions, accompanied by increased frequency of micturition. Shortly afterwards, swelling and puffiness of the eye-lids attracted his attention. When these symptoms had continued about a fortnight, his lower extremities began to swell. He was promptly placed under medical care; but, not getting better, and being unable to follow his occupation, he sought admission into hospital. He was not exposed to cold; had not any shivering; the urine had never the appearance of being bloody, and he was most temperate in his habits.

His symptoms on admission were ascites and general anasarca, the areolar tissue being extensively infiltrated. He

Fig. 13<sup>a</sup>.

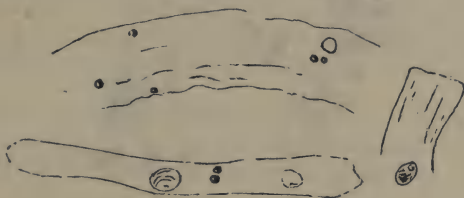


passed a tolerable quantity of urine, which was turbid—not smoky—acid, and highly albuminous; specific gravity 1.050<sup>b</sup>;

<sup>a</sup> Oily casts. Outline drawn with a camera. Examined with Smith and Beck's one-fifth, and magnified about 250 diameters.

<sup>b</sup> The urinometer was tested, and found correct.

and deposited numbers of cells, resembling renal tube epithelium, but loaded with oil, and enormous quantities of the bodies which have been described as oily and waxy casts. A copious deposit was formed in the long glass each day, chiefly composed of these casts, which are represented in Figs. 13 and 14. He was pale; had the peculiar chlorotic aspect of a person far advanced in renal disease; the skin was cool; and the pulse 68 in the minute; he had no head symptoms; neither had he diarrhœa or vomiting.

Fig. 14<sup>a</sup>.

Notwithstanding the apparently short duration of his illness the state of the urine caused the apprehension that the kidneys had already undergone serious structural change, and they were rapidly degenerating.

The treatment at first pursued consisted in the use of diaphoretics, which we subsequently changed for chalybeates, in consequence of his debility. In other respects his condition remained unchanged, the urine depositing daily the usual quantity of casts, and occasionally some uric acid crystals.

On Saturday, the 9th of June, he was seized with most violent vomiting and purging, which, although arrested by treatment, was succeeded by great prostration, from which he never rallied. He died the following evening, retaining his intellect to the last.

With some difficulty a *post-mortem* was obtained; our examination, however, was unavoidably limited to the renal organs. In opening the abdomen a large quantity of fluid was found in the peritoneum; the kidneys were of unequal size, the right weighing seven ounces, and the left five and a half: they were mottled, yellowish, flabby, and the capsule peeled off with facility. The cortical tissue, when cut into, was also yellow;

<sup>a</sup> Waxy casts.

and so great was the quantity of oil in their structure, that it was with some difficulty I could isolate a tube for the purpose of illustration. The tubes were stripped here and there of epithelium; and the latter, where existing, appeared dark and granular. There was evidently great obstruction to the circulation through these organs, as injected vessels were visible in different parts of the sections.

Fig. 15.

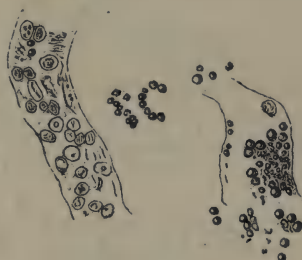


Fig. 15 represents two portions of the tubes, showing the great alteration the excreting structure of the kidneys had undergone.

Whether or not mischief had been going on in Armstrong's kidneys for any time before the irritability of bladder attracted his attention, I cannot venture to say. The history, however, leads me to think it was a case of rapid fatty degeneration, commencing about the time this symptom made its appearance. Be this as it may, when he first came under our observation, the urine gave unequivocal evidence of great organic change in the kidneys. For although occasionally persons have been known to recover in the acute disease, whose urine has deposited a few oily casts, it could not be anticipated that a person whose urine deposited such vast quantities of these casts as did our patient, would escape the dangerous consequences indicated by such a morbid state of the excretion.

10.—THORACIC ANEURISM, WITH AORTIC AND MITRAL VALVE DISEASE; SUBSIDENCE OF THE ANEURISMAL TUMOUR BEFORE DEATH.

JOHN ERRETT, aged 50, cabinet-maker, admitted into the Adelaide Hospital, November 14, 1859. This man presented himself at the Dispensary during the preceding autumn. He then



had a pulsating tumour, of about two inches in diameter, in the right mammary region. The tumour had two sounds simulating those of the heart. Corresponding to its situation there was well-marked circumscribed dulness on percussion. The apex of the heart pulsated in the left mammary region; but as I only saw him for a few moments, I did not then make a very minute examination, expecting to see him in hospital in a few days. He was free from stridor, aphonia, neuralgia, or dysphagia. I lost sight of him for some time, when his wife called to say that he was anxious to be taken into the institution. He was accordingly admitted on the 15th of November, 1859. It was then evident that life was ebbing fast. His pulse was excessively weak and irregular; the surface of the body was cold and livid; and he was universally anasarcaous.

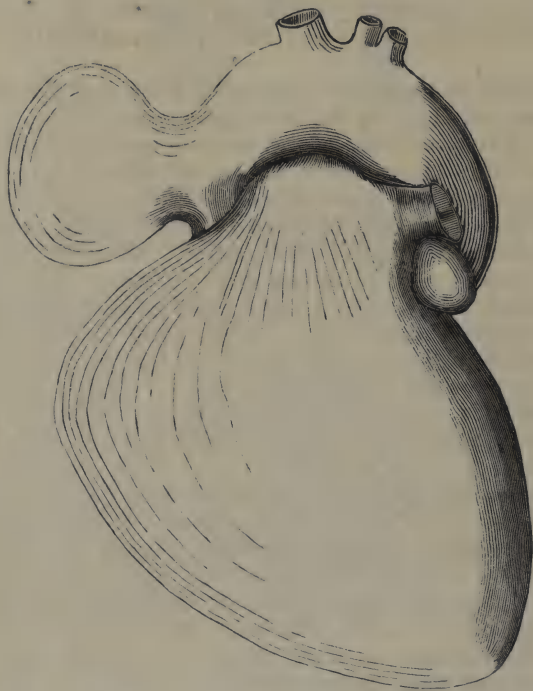
Our attention was now directed to the site of the tumour; but it was no longer visible, having disappeared about a month before. This subsidence of the swelling was not accompanied or followed by any symptom of internal thoracic pressure, if we except distension of the tributaries of the superior cava and some wheezing, the former of which might be also referred to and explained by mitral regurgitation. Having diagnosed thoracic aneurism when he first came under my observation, I need not say how anxious I was to discover the exact situation of the tumour. Accordingly, a most careful examination was made, and I again, but with great difficulty, detected the two sounds in the same place where they were originally heard; they were distant, and unaccompanied by murmur. When the stethoscope was applied to the cardiac region, a well-marked systolic murmur was heard at the apex; but, in consequence of the wheezing, we could not satisfactorily examine higher up, although we heard the two aneurismal sounds in the right mammary region. Careful percussion elicited a slightly dull sound in the original situation of the tumour. On pressing the palm of the hand firmly here, we thought a faint impulse was communicated to it. The chest was dull posteriorly and inferiorly; resonant in other parts. The pupil of the right eye was larger than that of the left.

It was evident, therefore, that although the tumour was no longer visible, it was still in existence. We were confirmed in this opinion by the presence of the systolic murmur at the apex of the heart allowing of a contrast being made between it and the two faint sounds in the right mammary region. He continued free from neuralgia, difficulty of swallowing, or stridor;

but the wheezing continued; and, from the dulness and absence of respiration, it was evident that fluid existed in the lower part of each pleura. He gradually sank, and died on the 17th of November, having previously expressed a wish that I should examine his body.

Both pleura contained serum. An aneurismal tumour, about the size of a hen's egg, was perceived at the right side of the aorta. It had remarkably thin parietes, contained some apparently recently coagulated blood, and was almost perfectly free from laminated fibrine.

Fig. 16.



Although the aorta itself was diseased and expanded, the aortic valves closed pretty well, as proved by the water test; the mitral orifice was much enlarged, and its valves greatly diseased. The right side of the heart was also dilated.

It is not my intention to dwell upon the sounds heard in

this case, as the bronchitic râles present in the chest during life may have led to some error of observation. I think, however, the case had one point of interest well worthy of attention at the present time, when the medical treatment of aneurism engages so much consideration. It shows that an aneurismal tumour may undergo a remarkable subsidence for some time before death, without the slightest attempt at obliteration of the sac; and it holds out the caution not to assume, because an internal aneurism retires during our treatment, that we have effected its cure. It likewise shows us the necessity for a *post-mortem* examination in some cases of aneurism, in order to know positively whether a cure has been established.

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ART. XI.—*An Account of some Parasitic Ova found attached to the Conjunctivæ of the Turtle's Eyes*. By EDWIN CANTON, F. R. C. S., Surgeon to the Charing Cross Hospital, and Lecturer on Surgical Anatomy.

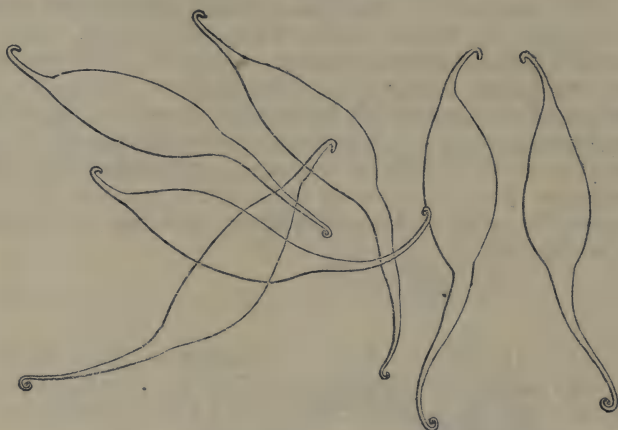
IN July last, while engaged in the microscopical examination of the tissues of the eye of the common turtle, I discovered a large number of parasitic ova attached to all parts of the conjunctiva, with the exception of the modified portion of this membrane which extends across the cornea. The ova were equally numerous in both eyes. I repeated the examination, and, in five consecutive instances, met with these cystic bodies, in the same situation, in the two eyes of each of the turtles. In a sixth specimen, however, the ova were entirely wanting.

The turtles were *lively* at their death, which was of a sudden and violent character, and took place in the city. I could discover no epizoon on any part of their heads which were sent to me.

With such fixedness are the ova adherent to the conjunctiva, that not even roughly scraping off the thick, slimy, secretion, which covers this tunic, detaches them. I detected them once, within a few hours after the death of the animal they infest, and, in this instance, found them present in large numbers, on the eyes of a turtle weighing upwards of a hundred pounds. As I have already stated, they were seen on all parts of the palpebral and sclerotic, but not on the corneal conjunctiva.

*So minute are these bodies, that they are undistinguishable to the naked eye.*

Subjoined is a magnified view of them, in a group, as shown under the microscope, and drawn by the aid of the camera lucida:



*Form.*—Elongated, unequally ovate; at each extremity, the body is prolonged into an infundibuliform appendage, one of which is about a third of the length of the long diameter of the body, and terminates in a fine point, abruptly curved so as to constitute a short hook, whereby secure anchorage to the conjunctiva is effected; the other is larger and longer, nearly equalling in length the whole ovum, and ends also in a fine point; it is curved at the terminal part, so as to form a coil, which often presents one or two turns; this may be regarded as the suctorial portion. The body is a simple sac, entirely destitute of internal organs.

*Size.*—For the convenience merely of stating the following measurements, I may refer to the different parts of an ovum as *head, neck, body, and tail*. Some of the ova are rather smaller than others, but the annexed has reference to one of larger and more ordinary dimensions:—

	Inches.
Total length, . . . . .	·0132
Length of neck, . . . . .	·0054
“ body, . . . . .	·0056
“ tail, . . . . .	·0022
Breadth of head, . . . . .	·00015
Neck a little below this, . . . .	·0001
“ at origin from body, . . . .	·0005
Body at its widest part, . . . .	·0023
Tail at origin, . . . . .	·0003



*Colour.*—The colour of all the ova is yellowish; or, perhaps, it may more correctly be said to be a light, ochreish-yellow; this tint pervades uniformly every part.

*Consistence.*—The chitinous shell-membrane appears to be tough and resistant; for when, in examination, an ovum has been irregularly compressed, it is thrown into large, and sharply-angled folds,—no fine wrinkling is to be observed.

*Aggregation.*—The ova are commonly found to be solitary, or in pairs; more rarely are they gregarious; but when in groups, there are five, eight, or sometimes ten, collected together.

In all the eyes examined, with the exception of those of the sixth turtle, I discovered a *second form of ovum*, not differing, however, in any material degree, from that already described.



The body is elongated, but not so swollen as in the preceding variety, though it is still unequally ovate. The shorter filament, which terminates one extremity, is less regularly infundibuliform; its thinnest portion is rather suddenly bent at an acute or right angle to the body, and ends in two hooks, joined by their convexities. From the opposite portion of the body the suckorial filament passes, and is, relatively to the corresponding part in the first-mentioned ova, longer, and more thread-like; slightly funnel-shaped at its commencement, it soon contracts, and, after a more or less flexuous course, ends by a rather sudden expansion into a flattened disc.

These ova are exceedingly few in number, and are generally smaller than those first described; they are, for the most part, found solitary: I presume them to be the same as those previously mentioned, only in an earlier stage of development.

Dr. Spencer Cobbold has obligingly examined my specimens, and I am indebted to him for the favour of the following communication:—"After a careful examination, I have arrived at the conclusion that the foreign cystic bodies adherent to the conjunctiva, are the ova of an ectozoon, the latter being parasitic, either upon the turtle itself, or upon some crustaceous epizoon likewise infesting the turtle.

"These ova differ in appearance from any I have hitherto

encountered, and are especially interesting in the circumstance of their presenting filamentary appendages at both ends. The hook-like filament is, probably, distinctive of the *species* of parasite to which the ova may be referred.

“The eggs of various forms of entozoa, and also in the allied ectozoa, display filamentary appendages at both ends of the chitinous shell-capsules; these processes generally resembling each other, as may be seen, e. g. in *Monostoma verrucosum* infesting the fox; in *Tænia cyathiformis* belonging to the swallow, and in *Tænia variabilis* of the gambet. In some cases, where the filaments are shorter, the eggs more closely resemble those to which you have directed my attention. This is evident in the ova of a curious trematode—*Octobothrium lanceolatum*—attached to the gills of the common herring, and likewise in the eggs of the still more eccentric-looking parasite—*Polystoma appendiculata*—found on the branchiæ of various marine fishes.

“In all probability, the entozoon from which the ova you have found proceed, is closely allied to those forms of trematode, or fluke-worm parasites whose eggs display only one thread-like appendage, or ‘holdfast.’ For example, the eggs of different species of *dactylogyrus* infesting the gills of the pike exhibit ova of this kind (a good representation of this is given by Guido Wagener in ‘Siebold and Kolliker’s Zeitschrift,’ vol. ix. Plate v., fig. 8.) The eggs of *Diplozoon paradoxum* are also especially worthy of notice, as from G. Wagener’s recent Prize Essay (‘Beitrage zur Entwicklungsgeschichte der Eingeweidewürmer’), it would appear that the single filament is liable to vary in length; whilst (as Van Beneden, Dujardin, and other observers have shown,) the end of the filament is ordinarily coiled upon itself in a manner precisely analogous to that noticeable in the ova from the eye of the turtle.

“On the whole, therefore, I think we may safely conclude that the ova under consideration are referable to a parasite more or less allied to the well-known *Diplozoon paradoxum* of Nordman; and I have little doubt that—if not already known to some Continental helminthologist—we shall, ere long, discover them in the oviducts of some species of *Polystoma*, *Tristoma*, *Octobothrium*, *Dactylogyrus*, or other allied genus of trematode worm.”

ART. XII.—*Five Cases of Neurotomy for Painful Affections of the Limbs.* By REDFERN DAVIES, Surgeon to the Birmingham Workhouse Infirmary.

CASE I.—*Past history.*—William Whitelaw, aged 54, formerly a soldier, and afterwards a labourer, in May, 1856, whilst at work upon the roof of a house, fell to the ground, a distance of some forty feet. He was immediately conveyed to an hospital, where he was found to have sustained a compound fracture of the middle-third of the tibia, and lower-third of the fibula, the bones, to use his own expression, “sticking out.”

He remained in the hospital about five months, when, his limb being to all appearance sound, he was discharged.

Notwithstanding, however, the apparent soundness of the leg, he was tortured with a similar pain to that he now complains of, and which had been coming on during the healing of the fracture. He has since been an inmate of several institutions, receiving but temporary relief. The wound at the fibula has twice opened, small portions of bone coming away.

*Present state.*—November 20, 1857. Upon examination, I found him to complain of a pain which commenced in the toes on their dorsal surface, extending over the foot, anterior surface of ankle, and leg, as high as the original site of the tibial fracture. The pain here stopped, but was again felt in a line running transversely from the last-named spot to the interval between the fibula and the edge of the gastrocnemius; thence it descended to the outer ankle and outside of the foot, joining with the pain on the dorsum. The pain was described as being constantly present, worse at times, and of a gnawing character; it was increased to intolerable agony upon moving the limb, or touching any portion of the surface included within the affected area. Upon jolting the heel, or bending the toes, a feeling like “pins and needles,” but of a very extreme painfulness, is experienced. This, however, only reaches as high as the fracture of the tibia. When the limb is embraced with both his hands, thus making firm pressure with the thumbs over the first intermuscular space on the anterior surface *above* the seat of the fracture, the pain situated over the dorsum of foot and front of leg becomes very much diminished; but that between the fibula and tendo Achillis, &c., remains unaffected. The limb is shrunk and flabby; the foot directed downwards; and the toes flexed and cold, and destitute of feeling; the axis of the limb is quite natural, and the bones in good apposition, with no undue amount of ossific deposit around their ends; the integument around the site

of the fracture reddened, depressed, and adherent to the bone; the ankle-joint is uncompromised; he denies syphilis, and there is no evidence of any other disease.

*Diagnosis.*—That a portion of the anterior tibial and musculo-cutaneous nerves were implicated by the fracture of the tibia, and its subsequent union. This would account for the pain on the dorsum of the foot and the anterior surface of the leg; and by reason of the communication between the communicans peronei and the external saphena nerve, so was the pain sympathetically experienced in the interspace between the fibula and tendo Achillis, and in the outer part of the ankle and foot.

*Operation.*—November, 1857. In the presence of many of my professional friends, Mr. Jauncey giving chloroform, I made an incision two inches long over the axis of the external popliteal nerve in the popliteal space, taking the inner border of the biceps tendon as a guide. The fascia being exposed, and a portion of it pinched up by forceps, it was divided on a grooved sound; by gently separating the areolar surface, the nerve readily came into view, and an inch of it was cut out. The edges of the wound were then brought together by suture. Directly upon recovering from the effects of the chloroform, he declared that the old pain was gone, and he could bear to have the limb jolted. For the three succeeding months, during which time he was under my observation, he steadily progressed; and the following is the report entered on the minutes of the Medico-Chirurgical Society of Birmingham, to whom I had the honour of presenting him, at the end of the above time:—

“The limb, when in a state of rest, has the toes drawn downwards, the foot turned inwards, and the heel raised. All power of extension is completely gone; sensation is less acute than on the opposite side, but it is gradually improving; he also perceives himself that the dorsum of the foot and anterior surface of the leg are much colder than the posterior and plantar surfaces; and to the thermometer there is a difference of four degrees in the temperature of the parts above and below the division of the nerve; a similar difference exists, likewise, between the temperature of the two legs.

“Since the operation, there has been no return of pain; and he has this day (February, 1858), walked, with the aid of a slightly-raised heel to his shoe, a distance of six miles, in perfect ease and comfort.”

*CASE II.—Past history.*—James Albert, aged 67, a locksmith. Three years ago he fell off a ladder, striking his right



thigh upon a rail; upon examination at an hospital the bone was found to be fractured at its middle-third. He was treated by Liston's long splint, and remained in bed for twelve weeks, when the bones had firmly united, with about one inch of shortening, and the condition of the limb was precisely as now.

*Present state, October 1st, 1858.*—He states that ever since the occurrence of the fracture he has been unable to put his foot to the ground, or bear any weight upon it, in consequence of the so doing being attended with such great pain; he is thus incapacitated from getting about, save on crutches; and the pain, though constant, is less when in bed. Upon examining the limb, the original site of fracture is easily recognised; but there is no deformity, save the shortening before alluded to, and the axis of the limb is natural. The ankle-joint is free, but its movements are attended with very great pain. The foot points downwards, the toes flexed, and to all appearance immovably fixed, any attempt to stir them causing great agony. The muscles on the posterior surface of the leg were very hard, rigid, and a good deal atrophied; the temperature of the limb was much colder, both to the feelings of the patient and to the thermometer,—a difference of five degrees being given by the instrument, as compared with the opposite extremity; and he said it always felt “clammy.”

For the purpose of further eliciting the condition and nature of the injury, I placed him under the influence of chloroform, and insensibility was produced; the toes resumed their normal position, and became freely movable; and likewise the muscles of the calf were soft—in short, the leg was natural.

As the effects of the chloroform went off, and consciousness returned, so did his limb resume its usual condition. A few days after, I visited him in his ward at night, when he was fast asleep; and, having gently uncovered his leg, I found the foot and toes in their natural state, and freely movable, till I awoke him, when they instantly became flexed and rigid. The last and most conclusive experiment that I instituted upon him was as follows:—

On October 8, 1858, by means of a conical bag containing a freezing mixture (having carefully protected the adjacent parts), I endeavoured to freeze the site of the posterior tibial nerve in its lower-third.

During the process, he complained of the usual pain attendant upon such applications; but was surprised to observe his toes gradually resume their natural condition, and that he could bear to have them handled without pain. Upon the withdrawal of the freezing mixture, they became speedily flexed, &c.

*Operation.*—Guided by these indications, I determined to excise a portion of the posterior tibial nerve; and on October 12, 1858, with the aid of my friend, Mr. Benjamin Hunt, I cut down to the nerve in the lower-third of the leg, a little above where it passes through the annular ligament, after the usual manner adopted for the ligature of the artery in that position,—cutting, of course, a little to the side of it: the nerve was easily exposed, neither the artery nor vein being seen.

Before the nerve was divided, he was allowed to recover partially from the chloroform, in order that the immediate effects of the section might be seen; when the toes became normal in direction, and could be moved freely without any pain; he could press, flat-footed, against the wall, and even desired to walk from the operating table.

About one inch of the nerve was removed—metallic sutures and water-dressing applied to the wound. Shortly after being put to bed, he mentioned to a companion in the ward the increased amount of warmth he felt in his leg; and at night the thermometer showed no difference in the temperature of the two.

The history of the case up to the present time (October, 1860) is, that he progressed favourably, the wound healing well; and he can now, aided by a high-heeled shoe—the necessity for which results only from the shortening of the limb, in consequence of the fracture—walk about, and work, standing at a vice, some nine hours a day, feeling no more inconvenience from one leg than the other.

CASE III.—*Past history.*—Hannah Eyre, aged 50, in May, 1858, received, in a brawl, a wound from a knife just below the pisiform bone. The wound healed speedily and well; but there has ever since existed, upon the slightest touch over the ring or little finger, or from any jar of the fore-arm, a most intense pain coursing up from those fingers to the shoulder. She has been unable, likewise, to make use of the other fingers, fearing lest she might touch those affected. Her arm was consequently useless, and carried in a sling. Both during sleep, and when awake, she had frequent and very painful twitchings in the fingers, and pains darting up the arm.

*Present state.*—December 13, 1858. Upon examining the hand, all the fingers are carried semiflexed; they could not be moved without causing much suffering to the ring and little fingers, which were cold and clammy to the touch. A normal cicatrix below the pisiform bone was seen, presenting no appearance worthy of note.

*Operation.*—December 14. An incision over the track of

the ulnar nerve was made above the pisiform bone, and half an inch of the nerve removed. She was not under chloroform; and, immediately the nerve was divided, her fingers were roughly handled, and she could firmly grasp anything without any sensation of pain.

She stated that, upon the section of the nerve being completed, she felt "a glow of heat run into the fingers;" and I could perceive them to be decidedly warmer than before the operation.

The result was, as examined by Dr. James Walker, of Peterborough, and subsequently by Dr. Augustus Waller (Professor of Physiology), a few months ago, that a complete immunity from pain was afforded. She was able to use both her arm and fingers as before in all the operations of life; and, in short, the only difference which existed in the limb, as compared to the time before the accident, is, that she cannot so well appreciate slight differences in textures from touch only, or pick up a *crumb* of bread or a *hair* from off the table as readily as before.

CASE IV.—*Past history.*—George Stephens, aged 59, a labourer, received an injury to the left wrist-joint from a fall of timber, in 1845. For five years he continued off and on under treatment, and in 1850 his fore-arm was removed (by Mr. Thomas Harding, of Stourbridge) at the upper-third. He went on very favourably for three weeks. In endeavouring to remove the last ligature, owing to the patient starting, it was suddenly twitched away. Instantly there ensued a pain in the middle of the stump. This pain gradually increased, and became constantly present. To his feelings, it was as though something was "working" at the end of the stump, and "like a live thing endeavouring to get out." He had, likewise, sensations as of his fingers being forcibly "ground together." Any movement, especially rotation of the limb, was attended by a feeling as though his fingers were being stretched. The end of the stump was very tender when touched, and he could not even bear the slightest pressure upon its surface; it appearing to him as if there was a "handful of pain." In rainy or cold weather these pains were increased.

In 1852, a tenotomy knife introduced beneath the surface of the stump completely separated it from the textures below. In 1853, a tumour was removed from the end of the stump; and in 1857, the tumour, being reproduced, was again removed. Each of these operations was followed by an improvement both in the condition and feelings of the patient: and after each, he for a time thought himself cured. This improvement

lasted, however, only for a time, and in the course of six months the old pains had returned with their usual force.

In June, 1859, he came under my care; and, though by no means sanguine as to the result, I operated on him. His condition and symptoms were precisely the same as above; and the pains in the fingers were not confined to any one in particular, but he could feel distinctly all and each.

*Operation* — With the help of my friend Dr. Thomas Walker, of Peterborough, about half an inch was removed from the musculo-spiral nerve, by making an incision over its course in the upper-arm, between the brachialis anticus muscle and the supinator longus, from the ulnar nerve, by cutting down upon it behind the inner condyle, and from the median, by exposing it in the middle of the upper-arm. The result was, that for a time he was very much better; and he could use his arm freely, and without pain,—the motions, &c., of the stump not being in any way interfered with by the removal of the nerves.

July, 1860. This, however, continued only for a brief space, the old symptoms gradually returning, and he is now in precisely *statu quo*.

*CASE V.—Past history.*—John Stephens, aged 32, by occupation a sailor on board a man-of-war, was admitted into the Workhouse Infirmary, May, 1860. He stated that he had enjoyed perfect health up to six years back, when, off the coast of Sierra Leone, he, with thirteen other men, were taken with yellow fever (of these, nine died, and one was sent home with a similar affection to that he complains of in his left arm). After lying six months ill with fever, and afterwards dysentery, he came home. In 1857 he again went to sea, in a merchant vessel, having been rendered unfit for the royal service from the toes commencing to contract slightly, and feeling pain in them. He remained in the merchant service up to midsummer, 1859, when the pains and contractions in his feet rendered him unable to continue.

*Present state.*—May 12, 1860. He complains of a pain situated on both sides of the big toe (of the left leg), and contiguous side of the next. This pain runs along the dorsum of the foot, and anterior part of the leg, nearly as high as the tubercle of the tibia. Firm constriction above by grasping with the hands, and making pressure with the thumbs, relieves this pain. He has also pain extending all over the plantar surface of the foot and heel, and running between the internal malleolus and heel, up to the posterior surface of the leg, till it was gradually lost in the popliteal space. This pain was described as “like the shock of a galvanic battery,” attacking him suddenly, and



continuing from one hour to twelve, leaving him faint with torture. There was also a constant pain as of pins and needles in these parts, which had very much increased during the past few months, so as to render him unable to bear any weight upon the foot; and any movement of the toes instantly generated pain like a galvanic battery. The foot felt cold and clammy, the muscles of the leg wasted and irritable, &c. The heel was raised some two inches from the ground; the inner edge of the foot drawn upwards, and the anterior two-thirds of the foot twisted inwards, so that he walked on the outer edge. The toes, especially the big one, were very much contracted and rigid.

*Operation.*—Pain being the most prominent and severe symptom, I determined to attack that first; and so, on May 12, I divided the anterior tibial nerve in the lower-third of the leg, removing about three-fourths of an inch,—the result being a total removal of the previous feelings in the big toe and anterior portion of the leg.

Allowing two weeks' interval to see the success of this step, I then divided the posterior tibial, which was followed with complete removal of pain—the patient, on leaving the operating table, could strike his foot on the ground, and walk with perfect ease. The deformity, of course, remained. This, however, has been remedied by dividing the tendo-Achillis, tibialis anticus and posticus muscles, and plantar fascia, and treatment with Scarpa's shoe; so that now his foot is restored to its natural position, and the limb is a useful member.

I should mention that the nerves were examined by Dr. Waller, who was present at the operation, but no microscopical or other changes were observed in their structure. During the operation, Dr. Waller applied a very fine thermometer to the limb, and found, almost immediately after the division of the nerve, an increase of temperature to the amount of three degrees.

ART. XIII.—*Some Remarks on a Peculiar Affection of the Knee-Joint.* By FRANCIS JAMES LYNCH, M. D., Physician to the Loughrea Workhouse, and Fever Hospital.

MR. MAYO, in the eleventh volume of the Medico-Chirurgical Transactions of London, directed the attention of the profession to a form of disease in the knee-joint, termed by him "An acute form of ulceration of the cartilages of the joints;"

and, subsequently, in his work on Human Pathology, p. 90, he further alludes to it, under the heading of "A class of cases of rare occurrence." Sir Benjamin Brodie, Mr. Hawkins, Mr. Key, Mr. Wickham, and others, have since published remarks on the subject; and most surgeons in Great Britain and Ireland in extensive practice are, doubtless, familiar with the disease, and its appropriate treatment; still, as it is rather a rare form of disease, the following observations and cases may not be wholly devoid of interest.

The disease is mostly observed in persons who have been subject to rheumatism, or to rheumatic gout, and is often brought on by exposure to damp and cold; the patient, after suffering from more or less acute synovial rheumatism of a migratory character, in the wrist, elbows, knees, and other joints, will suddenly complain of intense pain in one knee, where the inflammatory action seems to concentrate itself. The limb is almost always in the extended posture, the heel resting on the bed. The swelling, even at the commencement, is considerable, occupying the knee, the lower-third of the thigh, and the upper-third of the leg; it is not circumscribed above or below, but gradually tapers away, and is lost in the thigh and leg. The skin covering the affected part of the limb has a remarkably glossy, bloodless hue, resembling in colour white marble. It is exquisitely tender to the touch, and the swelling is found to be uniform, firm, and elastic; sometimes a crackling is felt under the examining finger, and at times slight œdema, or pitting on pressure, exists. The joint is the seat of constant pain; sometimes dull and throbbing, at other times lancinating and severe, with frequent and intensely painful exacerbations. The tenderness is very great, even in the skin, and the least pressure cannot be borne. Moving the toes, or shaking the bed, or walking heavily across the room,—in fact, whatever occasions the slightest disturbance or movement of the limb,—causes intense agony. There does not seem to be much, if any, effusion into the joint; and the usual prominences about it cannot be easily detected, owing to the thickened condition of the soft parts, and the extreme sensitiveness of the skin. Frequent spasmodic twitches in the limb increase the patient's sufferings, and interrupt the snatches of sleep, which anodynes, or exhausted nature, at times induce. From the commencement, there is a good deal of febrile excitement; nausea, anorexia, thirst, disturbed rest, quick pulse, heat of skin, and other marks of constitutional derangement, exist; the countenance is expressive of much pain and anxiety, and, as the disease progresses, emaciation, increasing debility, per-

spirations, and frequently recurring rigors, are observed. In this condition things may remain for weeks or months, when, in the majority of cases, either from the effects of remedies, or, in rarer cases, from apparently the unaided efforts of nature, the urgent local and constitutional symptoms gradually or abruptly abate, and the patient ultimately recovers, with the joint apparently ankylosed; but in process of time a limited degree of motion sometimes returns, only to a slight amount. Ultimately, however, after a year or two, the patient is able to walk without much lameness. The swelling never completely subsides; the patella is more or less fixed; the hollows on either side of the ligamentum patellæ are permanently filled up, not from effusion into the joint, but from thickening of the exterior tissues.

Owing to the limb resting for such a length of time in the extended posture, troublesome sores and excoriations are apt to form on the heel and nates; for months after the subsidence of the acute symptoms the patient is unable to rest on the limb, and its premature use will surely reproduce the original symptoms. Occasionally, during the acute stages of the disease, a degree of tenderness and some fulness is felt in the course of the femoral vessels as high as the groin, where an enlarged gland can be sometimes felt; showing that, in some instances, the venous and absorbent vessels participate in the existing inflammatory action. Such is the progress and termination of the disease, in its milder and most favourable forms; its leading features being well summed up by Mr. Hawkins, in the following extract from one of his clinical lectures on the subject, viz.:—"1st. Very acute tenderness of the skin, resembling, in this respect, hysterical affections of the knee. 2ndly. Great aggravation of pain on moving the limb, or the bed on which they lie. 3rdly. A pale, white, glossy appearance of the skin. 4thly. The swelling is peculiar, differing from that of simple synovial inflammation; for, while the swelling in the latter extends around the joint alone, in this disease it extends around the lower part of the thigh, and the upper part of the leg; it pits on pressure, and you can feel a sensation of crackling beneath the finger." Mr. Hawkins believes that the disease commences in the periosteum covering the lower end of the femur; and that after involving the areolar membrane external to the capsule, it passes thence to the synovial membrane and cartilages of the joint. At all events, it is probable that the inflammation originates in the areolar and fibrous tissues external to the joint. If, as occasionally happens, the disease is supposed to be rheumatic gout, or common synovial rheumatism, and is

treated by colchicum, and afterwards by hydriodate of potash, the patient will suffer for months from the violence of the pain, and the attending irritative fever, escaping ultimately with a joint more or less completely ankylosed, or the cartilages and synovial membrane of the joint become ulcerated and disorganized; and matter forms in and around the joint, running down the patient's strength, and either ending fatally, or rendering amputation of the limb necessary for the preservation of life. In the vast majority of cases, however, there is no tendency to the formation of matter within or around the joint; the cartilages are absorbed; and false ankylosis, without any accompanying suppuration, is established. If the disease be early recognized, rapid mercurialization of the system, and local depletion, will quickly restore the joint to its normal condition; even at a more advanced period, the same line of treatment will, in the vast majority of cases, arrest further mischief, and relieve in a very marked and satisfactory manner the local and constitutional symptoms, which begin abruptly to disappear as soon as the mercurial action is established. The painful condition of the limb pending the mercurialization of the system is often remarkably relieved by local sedative applications, amongst the most potent of which is a lotion of cyanide of potassium dissolved in water (4 grains to the ounce), applied tepid. In general, warm applications are preferred to cold; and French wadding, or carded wool, around the joint and limb, with a pad under the heel, will be grateful, and useful. Generally speaking, counter-irritation, by blisters or otherwise, does more harm than good, even on the decline of the disease. When the acute symptoms have wholly subsided, and the patient is able to rest a little on the limb, the Buxton waters, and a judicious course of shampooing, tend powerfully to restore a certain degree of motion to the joint. During convalescence, there are sometimes returns of severe pain, which are best relieved by the cyanide of potassium lotion, or by belladonna—two drachms of the extract in an ounce of water, smeared over the seat of pain.

In the acute stage, the stomach is so much disordered, that opium, in any shape, does more harm than good, when taken internally to relieve pain or produce sleep; but I have found Battley's sedative liquor to be, when a sedative is urgently required, the most preferable form, far more so than any of the preparations of morphia. During convalescence profuse perspirations are common; here the liquor cinchonæ, and eight grains of tannin, every night, will often check this exhausting symptom. A flannel bandage, using very moderate pressure,



from the toes upwards, is useful; but bandaging should not be attempted until *all* pain and tenderness cease. When the disease rapidly disorganizes the cartilages and other textures of the joint, or when a similar result follows a protracted attack, the case assumes the features of ordinary acute or sub-acute ulceration of the cartilages of the joint, and requires a similar treatment.

There is a well-known form of acute inflammation, which has been well described in this Journal by the late Mr. M'Dowel, attacking the periosteum, and articulating ends of the bones—in the vicinity of some of the larger joints, in certain states of the system, rapidly extending to the synovial membranes and cartilages of the contiguous articulations, and ending speedily in purulent effusion into and around the joint, absorption of the cartilages, necrosis of and separation of the epiphyses of the bones, thickening and separation of the periosteum, and other morbid changes, which is not to be confounded with the disease under consideration; such cases occur after parturition, or as a sequel to scarlatina, erisypelas, small pox, typhus fever, or what has been termed diffuse inflammation. Their course is rapid: several articulations are attacked in succession; a blush of redness, sometimes faint, sometimes vivid, is observed on the surface; the febrile disturbance quickly assumes the typhoid, rather than the irritative character; and mercury, and all other modes of treatment, are mostly useless.

The following cases, illustrative of the above remarks, are extracted from various papers on the subject, and a few of them have occurred in my own practice. The disease may, doubtless, affect other joints, but I have only seen it in the knee; and it cannot be very common, as, in twenty-five years' extensive experience, I have only met with three or four instances of it.

A married female, aged 40, after suffering from an attack apparently of rheumatic gout, flying about from one joint to another for several weeks, was suddenly seized with violent pain in the right knee-joint, accompanied by swelling and great tenderness. Her medical attendant in vain pressed the mercurial treatment, it would not be listened to, and the lady continued to suffer severely for some weeks. Colchicum, hydriodate of potash, and local depletion, having been had recourse to without any advantage, I found her, about the third week of the disease, in the following condition:—The knee was much swollen, the swelling being greatest at the joint, and tapering upwards as far as the middle-third of the thigh,

and downwards to the calf of the leg. The integuments are of a pale glossy white colour, without a trace of redness; exquisitely tender to the touch, particularly over the joint; and rather hot. There is a severe throbbing pain in the joint, chiefly felt at its inside, and much increased by the slightest motion of the limb, or by walking heavily across the floor; occasionally, violent pain of a lancinating character darts across the joint. The swelling is elastic, free from any enlarged veins, and does not pit on pressure. A good deal of tenderness exists along the femoral vessels, to the groin, where a few enlarged and tender glands can be felt. The natural projections and depressions around the joint are obliterated, but apparently more from effusion outside than within the joint. The limb lies in the extended posture, and the patient dreads the slightest movement of it, or of the adjoining portion of the bed. The heel is very painful, owing to the motionless condition of the limb. There are frequent spasmodic twitches in the muscles; and the entire limb feels hot, but seems cold to the patient, so as to oblige her to keep it wrapped up in flannel and carded wool. There is great uneasiness in the popliteal region—a feeling of distention there, as if the skin would burst. There was total want of appetite; great thirst; evening exacerbations, characterized by heat of hands, flushing of face, and increased heat of skin. She had chills every day, and perspired copiously at night; the pulse was 100; she had got very thin; slept very badly; and often suffered from nausea and vomiting. Pressure along the surface of the tibia, and over the femur, where it is most superficial, caused great suffering. The countenance was expressive of much anxiety; and bed-sores were beginning to form.

Fomentations and leeches gave temporary relief; opium, in any shape, could not be borne; three grains of blue pill were given every four hours; the bowels were attended to; and a lotion composed of sixteen grains of cyanide of potassium and four ounces of distilled water applied tepid, whenever the pain becomes severe.

During the next five or six days, there was but little change in the patient's condition; but extraordinary relief to the pain followed each application of the lotion—she called it the magical bottle.

On the seventh day moderate pyralism set in, and was followed by complete relief to the pain, and speedy subsidence of the constitutional disturbance.

A long period, however, elapsed before the patient could leave her bed. Blisters, to accelerate convalescence, did no

good; and a very cautious application of pressure and support, by means of suitable padded splints and bandages, after the acute symptoms had long completely disappeared, could not be endured. Later still, a journey to Buxton was with difficulty accomplished. Considerable advantage was derived from the use of the waters; but more particularly from a well-directed course of shampooing.

Three years, however, after the first onset of the attack, and notwithstanding the most careful attention, the motions of the joint were very imperfectly executed; and, although the lady walked without a stick or support, the knee could be only very slightly flexed, and the patella was only very partially movable.

Jane Williams was admitted into the Loughrea Union workhouse, on the 10th of June, 1856. On admission, the right knee was very much swollen, exquisitely tender to the touch, of a pale glossy hue; the swelling being greatest at the joint, and extending upwards and downwards for some inches, gradually diminishing, until it was ultimately lost in the thigh and upper-third of the leg. The skin over the seat of the swelling was perfectly colourless, and presented an appearance very similar to what is observed in phlegmasia dolens. There was no cedema, the swollen parts being rather springy and elastic. The shape of the joint was completely lost, the usual depressions and prominences being obliterated. The patient lay on her back, with the limb in the extended posture, and could not endure the slightest change of position either of the limb or body; there were occasional sharp pains darting through the limb and joint; and a dull constant feeling of uneasiness, more than pain, was felt in it. The sleep was much disturbed by painful startings of the limb; towards morning, profuse perspirations occurred, and at several periods during the day alternate chills and flushes of heat were perceptible. The pulse was 120, and weak; the countenance anxious and depressed; the appetite wretched; much emaciation and debility existed; there were thirst, despondency, occasional nausea, and rejection of food. The patient was a strong, middle-aged woman, who had several attacks of migratory, but not severe, rheumatism. A month before admission she caught cold, and was seized with violent pain, accompanied by swelling of several joints in succession. After struggling for a month against the disease, without medical assistance, the pains left the other joints, and the right knee became suddenly swollen, and the seat of acute pain.

Two grains of calomel, with one-fourth of a grain of opium,

given three times a day, produced ptyalism in six days, when all painful feelings in the joint and limb completely and suddenly ceased; but a considerable degree of tenderness existed for months, and several weeks elapsed before the limb could be put to the ground. After some months, strapping the limb with plaster of gum-ammoniac with mercury, spread on leather, seemed to give much relief and support to the limb, coupled with a well-adjusted bandage. A moxa, and afterwards a caustic issue, were tried without advantage; but ultimately she acquired considerable use of the limb, so as to be able to walk without much lameness, and without support. But after an interval of four years, when I again saw the patient, the joint was imperfectly ankylosed, little motion existed, and the patella was only partially movable.

As I have already mentioned, the disease generally terminates, in its milder forms, by a gradual disappearance of all the symptoms; more frequently, ankylosis, to a greater or less extent, results; in other instances ulceration of the cartilages of the joint, without any formation of purulent matter, ensues, giving rise to febrile symptoms, first of an inflammatory, then of a typhoid character, which speedily run down the patient, and destroy life, even in cases where active and appropriate treatment has been employed from the onset. The following case illustrates this latter mode of termination.

A girl, aged 22, liable to rheumatism, and accustomed to vicissitudes of temperature, admitted, under Sir B. Brodie, into St. George's Hospital, in June, 1827, after labouring under rheumatic pain in the elbows and shoulders for a month, was suddenly seized with exquisite pain in the right knee, increased on pressure, and aggravated by every motion of the joint. The pain was principally referred, not to the knee itself, but to the thigh-bone immediately above it. The swelling extended from the upper part of the thigh to the leg below the knee, being most conspicuous in the immediate neighbourhood of the knee-joint, and thence gradually diminishing, above and below, without any defined termination. The swelling was very considerable, glossy, tense, elastic, under-coloured, exquisitely tender to the touch, resembling in colour white marble; and both the pain and enormous swelling had occurred suddenly, the day before. There were quick pulse, hot skin, brown furred tongue, and a countenance expressive of anxiety and suffering.

Three weeks' treatment by leeches, salines, calomel, and opium, nearly removed all the symptoms, both local and con-



stitutional. Accidental exposure to cold, however, reproduced them; and, notwithstanding a repetition of the treatment which had been before successful, along with blisters, and the establishment of an issue, painful startings of the limb ensued, and other symptoms of the ulceration of the cartilages, which were rapidly undermining her strength, when an attack of peritonitis carried her off, in two months from the commencement of her illness.

On dissection, the cartilages investing the condyles of the femur, the head of the tibia, and the patella, were ulcerated, and the cancelli of the bones exposed beneath; the periosteum was easily separable from the bone for some distance up, and the bone itself was vascular. In this case it is probable that recovery would have taken place, without much, if any, injury to the joint, had not a relapse from imprudent exposure to cold taken place, as the treatment was prompt and apparently successful at first. I should mention, that not a particle of purulent matter was found within or around the joint, but some blood was effused into it. Although, in general, there is not much tendency to the formation of purulent matter in the milder forms of this disease, many cases are recorded of its running a much more rapid and destructive course, disorganizing the joint, and occasioning extensive purulent depositions in the joint and limb, either amongst the muscles, or between the periosteum and bone, or in all three situations. Thus, in a case adverted to by Mr. Hawkins in the 12th volume of the Medical Gazette, and in which the symptoms were exactly similar to the last case, as regards the local symptoms and constitutional disturbance, the patient gradually sank, after much suffering; and, on dissection, the cartilages were found to be extensively ulcerated; there was no purulent matter within the joint, although a good deal of matter was found, nearly the whole length of the thigh, among the muscles, near the bone. The periosteum of the femur was much thickened and condensed for some distance above the knee, and the bone was vascular. In another instance of this severe form of the disease, narrated in the 24th volume of Johnson's Medico-Chirurgical Review, p. 23, the patient died in a typhoid condition; and, on dissection, the principal seat of the disease was found to be in the periosteum and areolar membrane immediately exterior to it; the former was stripped from the femur throughout its lower-half, and was lying loosened and dead in the midst of pus; the articular cartilages were ulcerated; the joint contained pus, which communicated, by an ulcerated opening through the synovial capsule, with matter on the exterior of

the joint. In the following case, extracted from Mayo's work on Pathological Anatomy, the disease ended favourably in ankylosis, apparently uninfluenced by treatment:—A young woman, twenty-seven years of age, six months after labour, was seized with pain and swelling of the wrist; the next day, the right knee was attacked in like manner. The following day, the pain and swelling left the joint first affected, and attacked and settled in the left knee. Six weeks after the commencement of her illness, Mr. Mayo saw the patient. The thigh and leg were swollen, with serum effused into the areolar membrane; the joint contained no fluid; the pain in the knee was very acute and constant, and increased by the least motion; the patient lay on her back, with the knee straightened; leeching gave no relief; cold applications and fomentations were equally inefficacious; repeated blistering appeared at one time to be of service; small doses of calomel and opium were administered frequently during a few successive days, with no advantage; at length the pain seemed to abate spontaneously; the swollen state of the limb gradually subsided; the patient recovered the appearance of health, but the joint was wholly immovable.

Mr. Syme, in the number of the *Lancet* for April 19th, 1856, p. 437, makes some remarks on a form of articular disease which has some points of resemblance with the affection I have attempted to illustrate. Professor Syme's description is as follows:—The disease is generally met with in rheumatic subjects, and, after shifting from one place to another, fixes itself in the affected joint. In other cases it appears suddenly, and as a sequel of some feverish disturbance; it is hardly ever met with in the ball-and-socket-joints, preferring the hinge-joint articulations.

The symptoms are, severe, deep-seated pain, aggravated by pressure or motion, with exacerbations at night, and on the approach of rainy weather; diminution or complete loss of muscular power, with uneasiness in the limb generally, or in the nearest joint. Numbness, or want of proper sensation; more or less swelling, of an unyielding kind, confined to the seat of the articulation: it ends, after weeks or months, in recovery, with more or less stiffness in the joint, or in suppuration and ulceration of the cartilages. When the joint is examined at an early period, the cartilages are found eroded, with a little bloody fluid in the cavity of the joint. Internal medicines, the usual local remedies, such as fomentations, poultices, leeches, blisters, and issues, are useless; but the application of the actual cautery, used while the patient is under the influence

of chloroform, is said to be wonderfully efficacious. The disease which Mr. Syme describes seems to be confined to the synovial membrane and cartilages of the joint, and to be unaccompanied by any diseased condition of the periosteum, or of the bone, in the immediate vicinity of the articulation.

ART. XIV.—*Cases of Tertiary Syphilis; with Observations*. By THOMAS READE, M. B., and L. R. C. S. I., Belfast.

1. FATAL CASES OF SYPHILITIC MENINGITIS.
2. PROTRACTED TERTIARY SYPHILIS.
3. SPINAL SYPHILITIC MENINGITIS.
4. TERTIARY SYPHILIS, COMPLICATED WITH QUOTIDIAN AGUE.

I RESUME the subject of cerebral syphilitic disease, in order to submit my subsequent experience in this and other examples of disease emanating from syphilitic contamination, and as tending to exhibit the formidable character of the malady, when once engrafted on the human system, extending often to total subjection of the constitution, and a fatal termination.

Systematic writers have uniformly bestowed their labour and attention chiefly in the description and definition of primary ulcers, and the primary constitutional, or secondary forms of the disease, with the treatment,—though the rarer, but no less important, and more varied class of protracted and enduring diseases, called tertiary, has been more cursorily dealt with, though they are certainly more perplexing, from their complications, and affinities to other disorders of the human frame.

The late eminent and skilful physician, Dr. Todd, of King's College Hospital, London, and myself were, I believe, the first<sup>a</sup> who attempted to give a prominence and distinctness to this form of syphilitic disease, by calling attention of medical men to a very important diagnosis, and one on which, from the silence of the chief authors usually referred to for information, little or no guidance or instruction was afforded.

The statement of John Hunter, that the brain was exempt from syphilitic disease,—considering how much his authority and opinion influenced the minds of the first surgeons in the

\* In the autumn before Dr. Todd published his *Clinical Lectures on Syphilitic Disease of the Dura Mater*, he paid me a visit in Belfast, on which occasion we fully discussed the subject. I told him I had offered, for publication, a paper on the disease, in the year 1847. We had the most perfect uniformity of views on its nature and treatment. An accidental meeting with Dr. Neligan, the present Editor of this Journal, gave publicity to my paper, in 1852.

empire for a long period,—seems to have blinded his followers, and shut out from them the perception of an important truth; for otherwise it would seem unaccountable how a form of disease, now so fully recognised and acknowledged, could have evaded the observation of men so able and so inquiring.

Or could there be a different solution and explanation of this omission by the writers, up to a certain period, of reference to this special form of tertiary disease? Can the change arising out of the introduction of the non-mercurial treatment of primary ulcers have produced a modification of the progress and course of the constitutional disease, when not eliminated from the system? Is it the consequence of the non-interference with the law which governs this disease in nature, uninterrupted by art? If such forms of development of tertiary symptoms did not appear during the general employment of mercury for primary and secondary consequences of venereal ulcers, then we could, doubtless, conclude that the non-mercurial treatment has revealed to our knowledge a more distinct and clear portraiture of the progress of the poison in the human system by universal contamination and death, and so assimilating the description of “*lues venerea*” more to that of Astruc than of John Hunter.

In support and confirmation of my own experience of the formidable and deplorable effects of syphilis in the human constitution, I would call the attention of those who have a limited practice in this class of diseases to the testimony of an army surgeon, who reports the result of the present management of this malady on the large scale of a military hospital.

“Regimental surgeons are well aware how often the finest men in their corps are affected with venereal disease,—how many such men have their constitutions so much impaired as to render them incapable of duty, either for a considerable time or permanently; and that a very large proportion of soldiers are annually discharged from the service, directly or indirectly, owing to the effects of syphilis.” And he goes on to say, “I apprehend that statistics, deduced from documents at Chelsea, would afford very conclusive and startling corroborations as to the great cost incurred by the loss of the services of young soldiers, arising from syphilis; and cases in which the seeds of hereditary, and other forms of disease, have been brought into action by the taint of syphilis, would render the total of men discharged, directly and indirectly, from the effects of that malady, still more formidable.” “And too often the unfortunate offspring suffer for the sins of their parents, in stunted growth, scrofula, and other constitutional affections.”



This testimony of an army surgeon of experience offers no ground of congratulation on the success of medical science, or any proof that the treatment of syphilis, without mercury, is an advancement and an improvement on the treatment by mercury. On the contrary, it is an irresistible proof that constitutional disease abounds to a frightful degree at the present time; and certainly my recollection of the result of the former treatment of primary ulcers in private practice, by mercury, is, that it was not attended with this most unfortunate event on uncured patients, in anything like the proportion that latterly and now exists.

To a man who has had the misfortune to contract the primary ulcer from impure intercourse, it is to him a most momentous question, whether the best and most effectual means shall be adopted and used, to avert a constitutional disease, that may embitter all his future life, transmit disease and misery to his offspring, or even terminate his own existence by a death so repulsive to the mind to contemplate.

To take so gloomy a view of the subject of tertiary syphilis, I trust, may not be regarded in any way inconsistent with an impartial spirit of inquiry into the nature and treatment of this complex disease; but, by showing how often such unhappy cases may be submitted to one man in the course of a private practice (entirely distinct from a *speciality*<sup>a</sup>), and in most instances the nature and source of sufferings being imputed to causes, differing from the real one,—syphilis.

I shall report the cases in the following succession:—First, those cases which had a fatal termination; secondly, those which have been of remarkable tenacity and protraction; thirdly, those in which the spinal meninges were concerned; and, fourthly, a case of singular progress, distorted and masked by quotidian ague.

#### CASES OF FATAL TERMINATION.

CASE I.<sup>b</sup>—Owing to the nature of his business, Mr. D. F. was often detained from Belfast, for weeks at a time. In 1854, on one of these occasions, he was absent for six weeks, superintending workmen; while so employed, he was attacked by cranial pain, such as he had learned to combat and overcome, by the usual large doses of hydriodate of potash (twenty grains three times a day). He had no medicine with him,

<sup>a</sup> Speciality here means, no special character for a particular class of diseases, as eye, ear, chest, stomach, syphilis, &c.

<sup>b</sup> Dublin Quarterly Journal of Medical Science, February, 1852.

and persevered, notwithstanding his sufferings, till he had completed his object, and then returned to Belfast. Soon after his arrival at home, he was attacked with inability to move his lower limbs; he became delirious; his scalp was blistered; hydriodate of potash, which had so often subdued his suffering, failed, and I used mercury. After a long struggle, his intellect was restored, but his limbs remained permanently paralysed. He recovered so far as to be dressed, and lie on a sofa during the day, direct his business by personal communication; but, in about eight months, his vital powers succumbed, and he gradually sunk, a victim of constitutional syphilis. His life, I have no doubt, was cut short by his resolutely enduring his cranial suffering without interposing promptly with the appropriate treatment.

I regret I cannot perfect this case, by supplying a *post-mortem* examination<sup>a</sup>. I think I would not have been disappointed in my anticipations of finding extensive thickening of the dura mater, over the superior aspects of the cerebral hemispheres, and involving the arachnoid, the pia mater, and, probably, the subjacent cortical convolutions; and that the pons varolii and crura cerebri had equally suffered by extension from the disease of the dura mater at the base of the skull. This was the first case in which I made positive diagnosis of a *node* within the skull, in 1846,—although the case which guided me in this diagnosis I met with in 1838, and which I now publish.

CASE II<sup>b</sup>.—This case also had a fatal termination, but under a different progress of disease: no paralytic symptoms, or epileptic or cranial pains, recurred. With the outward semblance of vigorous bodily health, and for a long time an inordinate appetite, his mind underwent a gradual and progressive alteration. From being a man remarkably distinguished for good manners, great courtesy, and eminent social tact and address, belonging to the best class of society, amongst whom his company was constantly sought, he became morose, silent, and, when he did speak, apt to use offensive and coarse expressions; all this directly in contrast to his former character, and natural manner; he provoked to separation, or withdrew himself from his intimate and real friends, and latterly became solitary and desponding, lying in bed, without complaint of any disorder,

<sup>a</sup> Vide Todd on the Nervous System, Second Edition, *Post-Mortem*, pages 393 and 401.—*Medical Times and Gazette*, January, 1859.

<sup>b</sup> See Case III., Dublin Quarterly Journal of Medical Science, February, 1852.

till 4 o'clock in the afternoon. By accident, a servant entered his room at an earlier hour than usual (2 P.M.), when he was discovered in a state of insensibility. The medical gentlemen summoned to visit him, on the emergency, failed to restore sensibility, and he sunk comatose.

There was not any *post-mortem*; but, from the previous history of his case, when I reflect on the former class of symptoms,—at one time epileptic, at another in a state so apathetic and silent as to approach nearly to lethargy, followed by a short period of absolute mental derangement,—no doubt is left on my mind that the dura mater covering the superior convolutions of the cerebrum would have shown the chief morbid signification.

CASE III.—In 1853, Dr. Joseph Bryson (now deceased,) brought me to visit the wife of a person in respectable circumstances, in Belfast. She was suffering from intense cranial pain, want of sleep, great debility, and loss of appetite; she was very anemic, and altogether presented an aspect of marked cachexia. Dr. Bryson informed me that she had received venereal infection, some years previously, from her husband; that the treatment for the primary sore had been ineffectual; secondary symptoms followed, and on these supervened a thorough constitutional contamination. He had treated her, accordingly, for various outward manifestations of tertiary syphilis. She bore many cicatrices of former rupia; had nodes on the tibiæ, with syphilitic swellings of several articulations. In a word, she was a victim of confirmed, and probably incurable, tertiary disease. Dr. Bryson had been treating her with the hydriodate of potash, from time to time, with the mitigation or arrest of symptoms. He was then using quinia and sedatives, at night, but without any decided relief. I recommended him to return to the exhibition of the hydriodate in 10 grain doses every sixth hour, and in the intermediate period to give full doses of iron. I saw her, with Dr. Bryson, again in about ten days, and found her greatly amended, in so much that I could scarcely have recognised her. I saw no more of this patient for about three years, when I met another physician in consultation. I then found that anasarca had complicated her anemic condition.

We agreed to send her to some friends, in a rural situation, where she would obtain fresh air, a full milk dietary, eggs, and fresh meat; for medicine, we principally relied on iron to amend her anemic state, and indirectly overcome the disposition to serous effusion.

I heard no more of her till I saw the announcement of her decease, assuredly the termination of syphilitic cachexia, about six months after the last interview.

CASE IV.—September, 1846, I was sent for to visit a young officer in the barracks, who had recently returned from the Crimea. While engaged on a court martial, he was suddenly deprived of the power of speech, and at the same time suffered exquisite pain of the head. The staff-assistant surgeon, Dr. Buckley, had him immediately conveyed to his room, and placed in bed; but, feeling great difficulty as to the course of treatment he should adopt, refrained from active measures till settled in consultation. Dr. Buckley informed me, that this gentleman had told him (before this attack), when he consulted him, that he had been treated for a primary sore, by mercury, just before his regiment was ordered to the East. He soon exhibited secondary symptoms, sore throat, and eruption, in the East, when he was again treated with mercury. He then underwent all the hardships of the trenches—night-work, wet, bad food, cold, and misery. He suffered what were considered rheumatism pains in his joints; but the gallant youth never gave up his work till he had been wounded in the forehead by a glancing bullet at the memorable assault of the Redan (18th of June); he was sent home; the wound remained long open. Dr. Buckley pointed out to me the thickening of the periosteum of the internal malleolus, and of the shaft of the tibia. Dr. Buckley, at the time, was treating him with 5 gr. doses of hydriodate of potash. I had no hesitation in agreeing with him, that we had no justification for any depletory measures. The same medicine was continued, only given in 10 gr. doses every fourth hour, and a blister applied to the nape of the neck; beef-tea, and farinaceous food. The loss of speech was clearly depending on want of power to govern the mechanism of articulation.

Sunday (the next day), little change; but, if anything, better, though little sleep, and night restless, in pain. The doctor never left him all night. Continue treatment. Blister rose well; dress with mercurial ointment.

Monday—improved, can speak a little, in a very feeble voice. Continue treatment. Monday, 10 A. M.—Certainly better; can bear the admission of light into the room; blister discharging freely. Dr. Buckley sat up during the night, his attention has been unremitting.

Tuesday, 10 A. M.—Quite recovered, all pain of the head gone.

The officer had received leave of absence, to go to his friends



in England, and I gave him a letter of brief statement of the case to a surgeon of St. Thomas' Hospital. I did not see him again, but I may here copy the concluding paragraph of notes written at the time:—This young gentleman will, most likely, suffer a long period of syphilitic cachexia, before the constitution, aided by all the best powers of judgment and art, can restore it, if ever.

I conclude this case with the information, received while arranging my notes for publication, that this unfortunate young officer has just died.

#### CASES OF CONSTITUTIONAL SYPHILIS PROTRACTED THROUGH YEARS.

I find I must condense my notes of the following cases, by merely relating their salient points, restricting myself principally to the display of those symptoms which mark the invasion of the cranial contents, by the progress of the tertiary stage of the contamination of the fibrous membrane within the skull, spreading to the coverings and brain itself, comprising the functions of the nervous centres; and, if not arrested, causing irreparable injury, manifested in organic or structural demolition.

CASE V.—I first examined this gentleman in 1844; he came to me with a sarcocele of one testicle. He had been treated for primary ulcer, and secondary symptoms. For years he showed no symptoms of manifest syphilitic indication; but the disease was latent, and he has suffered manifold invasions of cerebral disease, affecting mental power, vision, hearing, motion, and several times paralysis; and all have been, as yet, overcome by the early application and attention to treatment. In this case I am encouraged by the expectation that the poison is wearing out in the body, as, for a considerable period, the attacks have been less violent in character, and increasingly amenable to remedies, of which the hydriodate of potash is the principal.

CASE VI.—I saw this case first with a cicatrised induration at the junction of the prepuce and glans penis; it was a perfect crescent, of cartilaginous firmness, and a sixth of an inch in thickness at its centre and upper part. He had papular eruption, and had been treated, in London, by the late Mr. Welbank; I treated the case with mercurial inunction, though confinement was with him impossible. All symptoms were removed—induration, eruption, in about two months, and treat-

ment ceased in three months. Two years after, he was leaving for a voyage to Greece, when he called on me with a recent infection, within four days of supposed contamination. I cauterized the sore with caustic potash most liberally. If cauterization could destroy, it was deeply and perfectly done. He was absent nearly one year; he had been treated abroad for an eruption; he became my patient again, with distinct tertiary eruption, and cranial pains. For nine years he has undergone repeated attacks, so repeated as to be almost unremitted,—the intermission of those much briefer than the illness. During this terrible and protracted disease, he has had the advice of Sir B. C. Brodie, Mr. Acton, Mr. Cusack, M. Ricord. It is needless to say they all acknowledged the disease; and we no way differed in treatment; all the preparations of iodine have had their turn; mercury, too; iron, quinia, cod-liver oil; we have possessed ample space, and verge enough, for all imaginable modes of treatment. The only means omitted, which I could never prevail on him to employ, was mercurial fumigation. When last I saw him, he was free from all disease, had married, and has, I am assured on sound authority, healthy progeny. Since the marriage he became my patient again, for phagadænic syphilitic ulceration twice, of a very extensive and serious character, attended with intense pain. He recovered well, however, and has since been free from disease\*.

CASE VII.—I saw, in consultation with an excellent and specially well informed surgeon on venereal diseases, a gentleman, with a primary sore, within eight days from first appearance; it was being treated with a weak escharotic wash—its syphilitic character being doubtful. I considered it specific, and advised mercury internally; in a fortnight it healed. Within six weeks the same patient called on me to show me his throat, which was attacked with superficial ulceration. The patient, who is naturally of a very timid, nervous temperament, immediately after we saw him, went to Dublin, to obtain the opinion of a surgeon of high character and great experience. He opposed the mercurial treatment which I had advised, and, of course, saw his symptoms disappear under the palliative treatment. But in due course the tertiary symptoms made their

\* In Dr. Todd's case of Begbie (*Nervous Diseases*, Second Edition), he refers to the question of the state of his progeny, as of particular interest. The question is here answered in confirmation of the attestation of M. Ricord,—that the tertiary disease is not infectious, or transferable, as secondary forms. There is another question of practical interest,—was it from the indurated or the cauterized sore the tertiary disease appeared? Ricord and Acton would affirm the former.

appearance—cranial pains; various organs, sense, motion, and mental power, have suffered in succession. The surgeons of London, Dublin, and Paris, alternately receive his visits; and he continues his wanderings from surgeon to surgeon, a miserable and disconsolate man.

As these three cases last related are fair, and by no means rare or exaggerated, examples of confirmed constitutional syphilis settled in the human frame, rendering existence painful and anxious, poisoning life, by depriving the sufferer of his natural energies of body and mind, it would be useless to multiply cases further of this class. I may say, “*ex tribus disce omnes*,” and in truth you see them in flocks, at once recognised by the “*facies syphilitica*,” in all the popular or fashionable sanatory resorts,—water cures, Turkish baths, and other more legitimate and recognised agents of restorative action, mineral waters, which attract the sick and the idle.

#### SYPHILITIC MENINGITIS OF THE SPINAL MARROW.

CASE VIII.—The surgeon of a regiment quartered in Belfast came to me, accompanied by an officer of his regiment, whom he felt anxious about, on account of a regular but progressive loss of sensation in the abdominal walls; it was now spreading down the thighs, accompanied by diminished power of the lower limbs in walking, with weakness of the knees—in short, he and the patient both feared an ultimate development of paraplegia. This gentleman, who, except that he was pallid, had otherwise no mark of disordered health, had been for more than eighteen months under the care of an hospital surgeon of Dublin, who successfully treated him for primary ulcer, for secondary symptoms, and latterly for tertiary symptoms. He was at that time taking the hydriodate of potash, 5 grs. three times a day. I was so convinced that this was a case in its essence identical with the syphilitic meningitis of the brain, only transposed to the fibrous covering of the spinal marrow, I advised the increase of dose of the hydriodate to 10 grs., and no other medication. Within three weeks the disappearance of the symptoms was complete, and I know he had recovered well a year after.

In confirmation of this interpretation of the case, I copy the following from the *Lancet*, May 12th, 1860:—“Professor Trousseau has in his wards a patient who contracted chancre five years ago—for which he received no treatment. He now suffers from periostitis, complicated with paraplegia. Ricord also recognises forms of paraplegia among tertiary accidents.”

## CASE OF TERTIARY SYPHILIS COMPLICATED WITH QUOTIDIAN AGUE.

CASE IX.—In March, 1838, I was required to visit a military officer, who was home on sick leave, having been on service in the Ionian Isles for eleven years. He had, after a period of ten years in that country of uninterrupted health and vigour, contracted the malaria epidemic there, which assumed the quotidian form. The disease being unrelieved by the treatment adopted there, a medical board sent him home on sick leave, after nine months' futile medication; he came to London, where he again received medical advice, then in Dublin; and finally, not far from his own residence, he consulted a physician in Belfast. No diminution of his sufferings followed; fever, emaciation, debility, continued to wear him out, and I was summoned to supervise the struggles of impending death.

He described to me a daily accession of eighteen hours of fever,—a cold, a hot, and sweating stage; six only of remission. The remission of six hours, for food and rest, was a poor credit account, against a debit of eighteen of waste. The emaciation was consequently frightful; wonderful how he could have existed under it, even for eleven months. He informed me that he had for a long time been unable to stand, from swelling of his ankles. On examination, there was great tumefaction of both internal maleoli; there was a soft tumour on the os frontis, which he told me had been lanced by an army surgeon; another, larger, but similarly containing fluid, was on the left parietal bone. I then proceeded to examine the state of the liver and spleen, the usual pathological seat of morbid evidence of malarious poisoning; there was not the slightest tumefaction of either, nor of effusion into the peritoneal cavity. I then put to him this direct question—When had he venereal sores? His reply, Never!! I felt puzzled, but had no course left, but to accept the case as one of ague with anomaly, under his solemn and repeated denial of venereal contamination. Twenty-grain doses of quinia during the remission for some days checked the severity of the fever, and improved the appetite; but he soon retrograded to the former state. I had him then removed, by easy stages, eight miles a day, in a reclining posture, to a relative's house, near my own residence. I then commenced a graduated course of arsenical solution, under which he again improved; he took at the culminating dose ten drops three times a day, but receded again. I then sent him to a dry, sandy soil, on the sea coast, where no malaria could be supposed to exist. He was in an excellent hotel. The preci-



pitiation and impending fatal termination were evidently not remote; days, not weeks, must measure the time. On my morning's visit, after days almost without food, nights without sleep, and the sense of his approaching end, he said, he had remembered, during the watching of the night, that an affair had occurred just as he was sickening of the ague, and which had escaped his memory—though, he believed, of no moment, he would tell it me. “Just at this *particular time*, he had accepted the tender advances of his Greek landlady. Not many days after, he showed a trifling abrasion on the penis to the surgeon in attendance on him for the intermittent fever, who cauterised it; it healed immediately, and was never again presented to his mind until the previous night.” I at once said, “That is enough for me; I'll give you a chance for your life; I'll immediately use mercury”—he at once consented. I had been reading, not long before, Mr. Colles' directions for the use of mercury in venereal hectic. I directed his servant to rub in a paper of mercurial ointment (15 grs.) inside the thigh once a day; made him take food as usual, such as he could swallow. The second night, he slept throughout the whole night—deep, sound, refreshing repose; he knew hunger (for breakfast), a stranger to him many months; he sat up in his room the third day; appetite insatiable, could walk well, but for the feeble degenerate muscles—his ankles bearing his weight. No man ever beheld a higher triumph of medicine. No tonic ever equalled the magic power mercury evinced in this case. If it be not the specific for syphilis, the world has none. But the recovery was not without its vicissitudes and its delays—a disease so engrafted into the system could not be erased in a day, nor by a single remedy. He brought on an attack of rheumatism by sitting out on the rocks, under the temptation of the most charming weather of the month of May, and the superb scenery of the coast of Antrim, one evening; this, of course, stopped for a time the specific treatment; then he had rheumatic scleratitis—but never again the ague. The amendment, though occasionally interrupted by further tertiary symptoms, sarcocele, a node under the biceps of the humerus, tumefactions, and pain of knee-joints, was progressive,—and in eighteen months he was a perfectly sound, healthy, robust gentleman, married a young lady; at sixty has a fine healthy family, and is an officer of rank in her Majesty's service.

In this case the secondary symptoms appear to have been entirely obliterated by the presence of fever, and the hectic of syphilis assumed the quotidian form. The fibrous covering

of the bones must very early have taken the syphilitic action; for the abscess over the frontal bone was lanced by a military surgeon in Corfu. It was from my reflections on the course and history of this case that I was led to see the high probability of the internal fibrous membranes participating in the syphilitic contamination; but I only fixed and determined the fact in the case of Mr. F. in the year 1845, the fatal conclusion of which I have recorded in this paper.

I have before observed, that in writings on the venereal disease the deaths from syphilis have not been recorded; and Mr. Colles, in his admirable work on the venereal disease, states that, when fatal, it is usually of diarrhœa, dysentery, dropsy, or some of the diseases of exhausted and worn-out constitutions, that the patients die;<sup>a</sup> but he gives no example, and, as I remember, refers to no case of paralysis, or any other case of disease from syphilitic action on the brain and nervous system. It is probable that few surgeons would have countenanced me in this crisis (Case ix); but I am justified in the result, and am fortified by the testimony of the employment of mercury in tertiary syphilis by Mr. Solly:—Case xxvii.: “The patient, named Hawkins, had long been suffering from secondary syphilis. He had been in the house some months before he came under my care. He had necrosis from nodes of portion of the frontal and parietal bones, but without any symptoms of cerebral disease, or even irritation. I happened, however, to remark to the pupils, that such cases were not unattended with danger, as inflammation of the dura mater, arachnoid, and pia-mater, sometimes suddenly supervened, and the patient would then sink from such effusion. About two days after this, I was called to him, in consequence of his becoming drowsy and stupid. When I arrived, I found him not quite insensible, but scarcely able to answer any question when roused; and, when left undisturbed, he was in a semi-comatose condition. I immediately ordered five grains of calomel every four hours, a blister to the back of the neck, and to be dressed with strong mercurial ointment; he got rapidly worse, and soon became insensible; but in twenty-four hours the mercury began to take effect, and it was most delightful to see the rapidity with which the cloud was again removed from his intellect. In forty-eight hours, he was sensible enough to answer questions, and ultimately quite recovered. It was also interesting to observe an immense improvement in all his syphi-

<sup>a</sup> *Vide* Colles on Venereal Disease, p. 11.

litic symptoms; his nodes became healthy, and some large rupial sores which he had on his thighs and legs began to heal, and progressed most favourably. Previous to this attack, he had been taking the iodide of potassium and sarsaparilla, and a generous diet<sup>a</sup>.

This case fully supports my statements, that the hydriodate of potash will often fail us in tertiary syphilis, and we must have recourse to mercury; we are not to be bound by an inflexible rule, that no mercury should be used for tertiary symptoms.

Dr. Todd also gives his opinion as follows:—"In such cases we must trust to the repeated use of iodine, as one element of cure; and we may aid the influence of the iodine by the occasional use of mercury, either at the same time with the mercury, or, as I prefer it, alternately"<sup>b</sup>.

I cannot conclude this very important subject, an endeavour to extricate the entanglements and difficulties of the natural history of syphilis,—a subject which has employed the minds of the ablest men who have ever practised medicine, and yet is still enveloped in obscurity and doubt, without referring to the very primary sign of the disease. For admitting the general acknowledgment of induration as a fixed and significant test of a contaminating ulcer, yet no man has been able to affirm that an ulcer without induration may not contaminate the system—even the simplest superficial abrasion may be followed by all the successive phenomena of syphilis.

It is not unworthy of commemoration, that, since the work of John Hunter on the venereal disease—an attempt to systematize and explain the natural laws of this abstruse disease—was published, none have followed more closely in his steps, nor examined his doctrines in a spirit more akin to that of the great naturalist, than members of the Irish School of Surgery.

Mr. Richard Carmichael, with great originality and boldness of conception, promulgated the non-mercurial treatment of syphilis; he supported his precepts with great ingenuity, and arguments drawn from cases demonstrative of the truth of the doctrine. His doctrine rapidly spread, and won converts and followers amongst the profession in all the chief cities and schools in Europe. But it had not universal acceptance, and, especially in Dublin, it did not pass without challenge, as it was subversive of the teaching of John Hunter on two leading

<sup>a</sup> Solly on the Brain, Second Edition, 1856.

<sup>b</sup> Todd's Lectures, Nervous System, Second Edition.

positions,—the unity of the animal poison, and its perpetuation in the human system, unless arrested by the action of mercury.

Mr. Abraham Colles, a man whose mind was trained and formed in the study of Hunter's works, received the new doctrine with the philosophic caution and scrutiny which was the element of his mental conformation. He, as Hunter himself would, at once bestowed all his penetrating sagacity, his deliberate judgment, and inimitable power of observation, to the examination of the truth and substantiality of the doctrine.

The result of that calm and deliberate inquiry is contained in his work on the venereal disease,—a work worthy of the man, and the school which he so long adorned as the Professor of Surgery; for clear and comprehensive description, faithful narrative, and depth of reflection, it cannot be surpassed. That portion, especially, which refers to the use of mercury, deserves more particularly to be commended, being, indeed, on this subject, the best work extant.

To their joint works may be traced all the elements of subsequent experiment and research into the natural history of syphilis; and, accepting M. Ricord as the interpreter of the present state of opinion of this important disease, certainly the most abstruse and complicated within the range of medicine, and receiving his treatment as that most generally established, it shows that experience is leading men back more nearly to the text of Mr. Colles, and to the restoration of mercury into its former place, as the sole remedy for syphilitic disease, namely, true primary (whenever that may be discovered), and for true secondary disease, which cannot be mistaken.

I shall close with the words of the first authority living in surgery<sup>a</sup>, referring to his own belief in the power of mercury judiciously used: “You will, I am satisfied, make, in the great majority of cases, a real and permanent cure of the disease. You must not suppose that we have advanced alike in all the departments of surgery; indeed, I am sure that in some things we have gone back, and this is one of them.”

<sup>a</sup> Sir Benjamin Brodie, Lectures on Pathology and Surgery, 1846.



ART. XV.—*Examples of Cystic Disease; with some further Observations on Cancer.* By MAURICE H. COLLIS, M.B., F.R.C.S., Surgeon to the Meath Hospital; Member of Council, Royal College of Surgeons; &c. &c.

1. CYSTIC DISEASE OF BREAST, WITH ENDOGENOUS GROWTH IN THE INTERIOR OF THE CYSTS, SHOWING THE MODE OF ORIGIN OF THE CHRONIC MAMMARY OR ADENOID TUMOUR.
2. CYSTIC DISEASE OF THE BREAST, COMPLICATED WITH CANCER.
3. SINGLE ENCYSTED HEMORRHAGIC OR FIBRINOUS TUMOUR IN THE POPLITEAL SPACE.
4. MULTIPLE ENCYSTED FIBRINOUS DEPOSITS IN THE TESTIS.

THESE cases are given as types of diseases, and it is not to be inferred that the accompanying observations are founded solely upon them. The deductions arrived at are the result of some study of the subject; and it would be both tedious and unprofitable, even were it possible, to enumerate all the steps by which I have been led to form them, or the entire data on which they rest.

CASE I.—*Cystic Disease of Breast, with Endogenous Growth in the interior of the Cysts, &c.*

Mrs. S., a healthy lady, about forty-five years of age, the mother of several healthy sons and daughters, consulted me, two years ago, about a tumour in her breast, which had begun to give her some uneasiness. The account which she gave me was to the following effect:—Many years before (at the least, fourteen), while stooping to caress a pet lamb, she received a blow in her breast from the animal's head. This caused her some temporary pain; and a small, movable tumour was soon after perceived in the part. After several years, she suffered another injury in the breast, upon which the tumour increased in size; however, as the pain resulting from the injury did not continue, she did not consider the temporary uneasiness sufficient to render surgical interference necessary. Three or four months before she consulted me, she sustained a third injury in the breast. From this out she suffered constant uneasiness, and almost continual pain in the part. The tumour now rapidly increased, projecting the skin forward, and rendering it livid over the most prominent point. The superficial veins, also, became enlarged and tortuous. To the eye it had much of the appearance of an encephaloid tumour. Upon handling it, fluctuation became evident; and although there was a basis of solid matter, the bulk of the tumour was plainly of a cystic

nature. The solid portion lay deep, and, as well as we could make out, was hard and firm; we could trace no adhesions, and there were no large glands in the arm-pit or about the collar-bone. As it was a source of much uneasiness, both of mind and body, and as the cystic growth was rapidly increasing, and, moreover, as there was a solid and probably not a cancerous basis to the growth, I resolved to remove it: the entire breast was condemned, because of its small size, and the probability of the cysts permeating it in all directions.

I need not weary the patience of the readers of this journal by a minute detail of the operation or subsequent treatment. Suffice it to say, I secured a clean and bloodless surface by a little extra care in tying or twisting all bleeding points; and I brought the edges together with a number of wire sutures: the wound healed with rapidity, and the patient was out of my hands within a fortnight. I have frequently seen her since, and her health continues excellent, and her spirits are much improved by having lost what had long been a source of anxiety to her. No return of the disease is to be expected in this case.

A dissection of the breast showed multitudes of small cysts, the size of pin's heads or small peas, a few as large as hazel nuts, one the size of a hen's egg, and two of somewhat smaller dimensions; some contained a sero-sanguineous fluid; some were filled with solid matter. A careful study of several gave the following interesting results, which illustrate the progress from cystic to adenoid tumour:—First, in the largest cyst I found a solid growth, projecting towards the centre, and attached by a pedicle to the lining membrane of the cyst; then, in another cyst a similar mass was found, completely filling up its cavity; while in a third, which was similarly filled up, the pressure of this endogenous growth had produced an atheromatous degeneration of the walls; the fragmentary remains of other cysts could be made out round some other of these endogenous growths. The minute structure of these substances was exceedingly elementary; there was a certain amount of common fibrous stroma binding together a mass of simple fibrine cells, which deviated in no apparent manner from the undeveloped cells of plastic lymph. They were arranged in acini, attached to a pedicle, like minute cauliflower growths, but of a firm consistence, and devoid of the creamy juice which permeates all cancers. The mode of increase was evidently like that of a tree, not only increasing by interstitial deposit, but by additional branches. The resemblance to the genuine structure of the mammary gland was confined to the mode of arrangement. There were no ducts, no cavities in the lobules, and, of course, no epithelial lining. The substance was identical with that of

Sir Astley Cooper's chronic mammary tumour, or Velpeau's adenoid tumour. It was evident that the cystic growth was in process of being superseded by the fibrinous, and that a time might have come when all trace of cysts would have disappeared; we had first the cyst pure and simple; then, the endogenous growth, filling the cyst more or less; and, lastly, the cyst disappearing under the pressure of the new growth. The cyst perished by the ordinary oily degeneration; there was nothing special in it, different from the mode in which effete material is removed from the economy under common circumstances; only there was no reproduction, just as in all fatty degeneration. The new material neither infiltrated nor inflamed the tissues on which it pressed.

Indeed, with the exception of cancer, I know of no morbid growth which acts as a foreign body when living; and further investigation may, perhaps, show us that cancer does not so act until the cancer-cell has lost its vitality. In the present case, there is no doubt about the matter. The cell-growth filled up the cyst, and still continued to grow, while the cyst, unable to expand, became compressed, lost its vitality, became oily, and was finally absorbed, or burned up, and removed. This is probably the history of most, if not all, chronic mammary growths, as has been ably stated by Mr. Paget and others. My reasons for recording the case are not so much to confirm these views, as to contrast and compare it with the remaining cases on my list, which are types of other forms of cystic growths.

The second case, cancer with cysts, has been already alluded to in this Journal, vol. xxv, p. 335. I shall briefly reproduce it. A lady, aged 38, mother of one child, very large and stout, complained to me of a small swelling in the upper part of the left breast; it was movable under the skin, and attached to the gland, but standing up from it; it was hard and nodulated, the seat of lancinating pains of much severity, and it had enlarged veins over its surface; it was far from the nipple, which was not retracted; it increased very slowly, the lady had been in bad health, with fatty heart, and occasional congestion of lungs. Consequently, I temporized, giving iron, arsenic, and iodine, and at first using discutient lotions, then doing nothing locally, as I found that interference increased both general and local uneasiness. Gradually, I observed the breast to swell, until it became raised to the level of the original tumour, which was almost lost in the new development. The surface of the breast felt granulated, as if shot were scattered

under the skin. Bloody serum oozed from the nipple, almost from the first. With all this (which took nine months to occur), the lady's health became considerably improved; and as I could not assure her that she had no cancer, although the bulk of the tumour was cystic, I was urged to remove the breast. This was done three years ago (Oct., 1857), and as yet there is no reason to apprehend a return of the disease. The growth, which first showed at the top of the breast, was composed of the tough, fibrous tissue of the breast, inflamed and condensed by the presence of large, oily, cancer-cells, stained with melanotic pigment. The remainder of the breast was studded with small cysts of simple form; many of them communicated with the ducts of the gland; they were filled with sero-sanguineous fluid; and some of them contained minute secondary cysts, with slightly-scolloped edges, attached by a pedicle to the lining membrane. These secondary cysts were full of a similar fluid. In no instance was there any endogenous growth of a solid nature: I searched for it with care. Nor were there any cysts in the cancerous portion of the gland, owing, no doubt, to its great density. Hence, I was driven to conclude that the two diseases, though coincident in the same breast, were, in reality, independent in origin and progress,—the cyst originating in inflammatory action on the ducts of the gland, and the cancer having its seat in the interstices of its fibrous stroma. It would have been most interesting to have found the two together in the same section of the breast, and to have observed whether the cancerous substance would have appeared as an endogenous growth springing from the cell-wall, and destroying it, as the more simple fibrinous growth seemed to do in the former case. But, however interesting this might have been in a scientific point of view, it was infinitely more satisfactory to have removed it while the cancer was in a quiescent state.

CASE III.—*Hemorrhagic Fibrinous Tumour in the Ham.*—One of great interest to me. It was that of a labourer, who received a blow from a spade-handle in the thigh, close to the vessels as they pass into the popliteal space. A small, soft tumour quickly appeared, which gradually increased in size and solidity, and remained of an oval outline; when it came under my observation, several years after the injury, it had grown to a large size; it filled the popliteal space, and projected considerably on its inner margin; it was firm, heavy, rolling loosely in the somewhat loose areolar tissue of the ham, painless, but very troublesome from its weight and interference with the motion of the limb. No glands were enlarged in the groin,



nor was the current of blood interfered with in the veins; there was neither œdema nor varicosity. Had it been in the testis I might have concealed my ignorance of its nature under the name of sarcocele; but, situated in the ham, it was termed a tumour of plastic material, certainly not a cancer, and nothing more. I removed it, but with some difficulty, as often happens with glandular tumours of apparently loose connections. The man got well, left hospital, and went to a distant part of the country, where I heard, in a few months, that he was suffering from an enormous semi-fluid tumour in the ham. He subsequently died of pain, and exhaustion from profuse discharge; but the particulars of his relapse I have never been able to learn with accuracy, as he was not seen by any medical man, and I only heard of him through a third party. The section of the tumour was most singular; I had never seen a similar at the time, and I have only seen one since perfectly alike. The centre was occupied by a black semi-fluid coagulum; outside this was a layer of soft, dark-coloured lymph, the result of a previous clot in process of organization; outside this again was another, and another layer, less and less dark, and more thin and firm; until the outermost of all, which was a dense, firm, fibrous envelope, closely adherent to the layer which lay next beneath it, and endowed with vessels as abundantly as any natural fibro-areolar tissue of similar density. It was strikingly like the section of a cured aneurism to the eye, so much so, that I at once named it, "The hemorrhagic fibrinous tumour." It was similar in its central cavity, filled with fluid blood, and in its concentric laminæ of variously organized lymph; it differed from it only in its origin from a clot of blood; in its growth, by internal hemorrhages, as well as by interstitial deposit, and in the layers of lymph being more firm, and less brittle. I could not trace any special connexion with vein or artery, such as would have accounted for the hemorrhage; and its cystic envelope must be looked upon rather as an accidental development of the most external layer, than as the original source of the hemorrhage. The disease commenced, evidently, as an effusion of blood from injury; the clot, instead of being absorbed, became organized; and, once organized, it came under the action of that mysterious law by which tumours grow—the law of independent vitality, by which they grow out of proportion to neighbouring parts, and often at their expense—a law which is but another expression of the fact, that like breeds like,—a law in virtue of which cell-growths, whether normal or abnormal, reproduce their own kind, and which in the present case, from a simply organized clot of

blood, produced a tumour, which grew by successive hemorrhages. I have since seen a perfectly similar tumour to the above. The situation of it was the testis; and the tumour had acquired an enormous size, completely destroying all vestiges of the proper structure of the organ, the fibrous tissues of which could be distinguished, pushed to one side, and compressed. The section of the tumour was similar to that described above, and the history was also much the same; there was super-added some infiltration of the supra-pubic areolar tissue, and of the inguinal glands. In this case the disease had been set down, by some, as schirrus, which its size alone ought to have disproved, the schirrous testis being a small tumour; while others, who looked carelessly at the resemblance of the fresh section to brain-matter, gave it the title of encephaloid, which its great chronicity equally disproved. Having seen the former case, I was able to name it; and, as there was difference of opinion, which gave rise to remarks disparaging the value of microscopic examinations, I sent a portion to Mr. Paget, with a request that he would do me the favour to examine it. This he most kindly did; and, without being aware of what my opinion had been, he fully corroborated it. He stated that the form of tumour was one he had not met with before; that it was composed of small nuclei and cells, differing but little from lymph-cells; that it was probably of slow growth, and was certainly no form of cancer. The tumour had been years growing; and caused the death of the patient, from gangrene, the result of self-inflicted injuries.

#### CASE IV.—*Multiple encysted Fibrinous Deposits in the Testis.*

A labouring man, aged 40, received some injury of the testis six years ago. Soon after he observed a small, hard kernel on its inner side. This increased slowly up to last April, and became gradually troublesome from its size and weight. Since April it has rapidly enlarged, and by its traction on the cord has become the cause of much pain; there had been no second injury, as far as he can remember, to account for the sudden increase in the rate of growth. He has lately made some attempts to reduce the tumour by mercurial ointment, strapping, and the use of iodine, with little, if any, success. He is otherwise healthy, has never had venereal in any form, and is not married. The tumour is now the size of a cocoa-nut, measuring  $5\frac{1}{2}$  inches by 4 in its diameters; it is oval in outline, departing little from the form of the healthy organ. It is firmly elastic in all parts, except the upper and anterior,

where a collection of fluid evidently exists; pressure in this point gives the feel as if the finger sank through the fluid into a cup-like depression in the solid tumour. No enlargement of glands could be made out; the skin was not adherent in any part to the tumour; nor was there any pain experienced, except what was referable to the traction on the cord. The man's health was good; the tumour interfered with his work; it was not cancer, and I removed it. He made a rapid recovery, and is since well.

A section of it showed a number of cysts, filled with lymph, organized in the peculiar manner which is characteristic of the organization of coagula. The cysts were perceptible on the first section, and their glistening whiteness contrasted strongly with the pinkish colour of their contents, and with the gray tubular substance of the testis, much of which could be seen in detached islets through the tumour. All the cysts were full of these remains of coagula; when hardened by a day's immersion in Goadby's solution, the coagula became brittle, and could be readily turned out of the cysts, to which, however, they had a minute vascular attachment; they were not attached by any pedicle to the wall of the cyst, as in the proliferous variety; but seemed, as in Case III., to be hemorrhages into the substance of the organ, which had acquired an independent vitality, and had become surrounded by a cyst. A superficial examination would readily confound them with masses of encephaloid, which their colour and outline caused them to resemble; a careful inspection, independent of aid from the microscope, showed them to be more firm, and less juicy, more friable, and less pulpy, less evenly white, and more yellow, than encephaloid. Of course, under the microscope, they are readily distinguished, the cells being smaller than the nuclei of the cancer-cell, and unable to resist the action of dilute acetic acid, as the latter do. I have often urged on young microscopists the necessity of using a few chemical reagents in all cases admitting of a doubt; and I take this opportunity of repeating the advice, as many otherwise good observers have fallen into blunders by its neglect. Many a time when the cancer-cell cannot be seen in a specimen, the addition of the acid will cause the characteristic nuclei to start into view in great numbers; and the converse is equally true, that cells which deviate but slightly from the lymph-cell may be mistaken for free cancer nuclei, until their cell-wall is broken up by the acid.

I shall now give in a tabular form the signs by which, as a

rule, these various tumours are to be distinguished from one another, and from the two leading types of cancer:—

Schirrus (chronic cancer.)	Encephaloid (acute cancer.)	Hemorrhagic Fibrinous.	Simple Cysts.	Adenoid.
Grows slowly.	Grows rapidly.	Generally slow at first; often increases with energy.	Same as preceding.	Slow generally.
Is small, hard, and heavy.	Is large, soft, elastic, and of moderate weight.	Whether large or small, is always elastic; heavier than encephaloid; lighter than schirrus.	Very variable in size; granular when small; fluctuating when large; light.	Small, hard, and heavy generally, but sometimes acquires a great size
Early adhesion to neighbouring fibrous structures.	Adhesion is slow to take place in proportion to rate of growth.	Adhesions rare, trivial, and probably accidental.	No adhesion.	Loosely rolling single, or pediculated tumours.
Many small, roughly nodulated surfaces.	Many large, smoothly nodulated surfaces.	A few large, smoothly nodulated surfaces.	Hard, small, detached granules or large smooth surfaces, with intermediate forms.	No adhesion, unless when ulceration mechanically takes place.
Immediate poisoning of lymphatics, and rapid secondary deposits in glands.	Poisoning of glands or lymphatics seldom occurs prior to ulceration.	Poisoning very rare; probably never without ulceration.	None.	None.

I have thus striven to place in a tabulated form the marks that will generally enable a careful observer to distinguish these tumours, especially in the earlier periods of growth. It is of the greatest practical importance to be able to give a decided opinion at the outset; and, where our own minds are made up as to the proper course to be adopted, to urge it upon our patient in the most effective manner. It is perfectly possible, and by no means difficult, to recognize a genuine cancer, whether schirrus or encephaloid, of the smallest size. In the majority of cases of schirrus, the eye can make the diagnosis, though no prudent surgeon will trust to it alone; but it is a fact that, if a good light be thrown upon the skin, minute dimples or depressions will be seen over or near the tumour. These mark the attachments of the subcutaneous bands which run towards the tumour, and are produced by the shortening



of these bands. It is not necessary to have actual infiltration of the skin by cancerous matter to produce them; they are, in fact, the forerunners of this infiltration, and are often valuable as giving warning of the earliest approaches of it. They are not present in pure encephaloid, which is to be recognised by the other signs given above, nor are to be found, as far as I know, in any of the more innocent growths.

If the skin be carefully pinched up over the tumour, and over a neighbouring sound part, the difference of adhesion can be felt and seen most easily, if it exist in ever so slight a degree, just as comparison assists in ascertaining slight shades of dulness in phthisis.

Of growths which are not cancer, but which equally with it have their origin in the lymph-cell, and are interstitial or infiltrating, there are almost as many varieties as there are cases. After reading most of what has been written about them, and having seen a good many, I am satisfied that this whole class may, for practical purposes, be included in the following formula:—"The nearer in form and power of development that the constituent cells of a tumour are to the healthy lymph-cell, the more innocent is the tumour: the further removed, the more destructive." To expand this a little, and make it intelligible, we find the healthy lymph-cell small, circular, slightly granular, with a little nucleus, and developing into a fibre. Our simplest tumours are composed of cells, scarcely, if at all, to be distinguished from the above; and these white fibrous, or desmoid tumours, are the most innocent possible growths, as a general rule. A stray exception may occur, now and then, to prove the rule. We then come to fibroid, fibro-nucleated, recurrent fibroid, fibro-plastic, fibrinous tumours, named according to the fancy of writers, who recognize alike their similarity to simple fibrous tumours, and their divergence from them. These are of variable malignancy; they are of as variable minute construction. Not only do their constituent cell-elements differ more or less in form from the primary lymph-cell, but they also differ in power of development. Some remain always as cells, and never develop into fibres; these are the most recurrent. Some make attempts at development, and hence the caudate cell of various form; some appear as nuclei, only without external cell-wall. Again, power of development into fibrous forms is quite different from active reproduction; generally it is not associated in the same cells. The recurrent tumours are masses of rapidly produced cells, or nuclei, with no attempts at the formation of fibre.

Of these I have seen many examples, none more remarka-

ble than the case of a man from whose shoulder such tumours have been removed, at least twenty times, by Professors Rawdon Macnamara, Senior and Junior, and by other surgeons. My friend, the present Professor of Materia Medica to the College of Surgeons, knowing the interest I took in such subjects, kindly gave me an opportunity of seeing the tumour on one occasion. It was a mass of most elementary cells, low in organization, active in reproduction, and was the most recurrent tumour I ever heard of. There is some tendency to this form of growth in all secondary tumours, whether glandular or local relapses.

Cancer itself can be brought under the above law. It is no heterologous or parasitic formation. It is simply a monstrously abnormal plastic growth; its cells differ as widely as possible from the healthy type. In acute cases they are rapidly produced, make scarcely an attempt at development, and die off with rapidity; in schirrus they are formed more slowly, and in much smaller numbers, live longer, and make some attempt at caudation, but they are still farther removed in form from the typical cell of healthy tissues.

The more I think over the subject of morbid products, the more am I convinced that, in the above formula, we have the expression of a law that includes most of their phenomena. It will, slightly modified, apply not only to large classes of tumours, but also to tubercle and to pus. Tubercle is a lymph-cell, of low vitality, incapable of development into healthy fibre, dying after a short existence, and generally becoming a foreign body. Pus may be described in words almost identical—their material difference being one, probably, more of chemical constitution than of vital power—for both are possessed of almost a minimum of vitality. Tumours are composed of cells whose vital force is greater than pus or tubercle; and this vital power is rather spent in reproduction, than in development, as in the healthy cell. The ordinary plastic cell goes through certain phases, dies, and is removed; its place is taken by a new cell, developed, probably, from the nucleus of its predecessor. The abnormal cell fails to arrive at perfection, often becomes a monstrosity, and has a tendency not only to reproduce itself from its nucleus, but to generate in neighbouring lymph organisms similar to itself. Thus the constituent cell of the tumour has a certain independent vitality, similar to that of the entire tumour; or rather the converse is true—the tumour is composed of cells of independent vitality, and hence it possesses the same form of life with the cell. And, as the life of the cell is of a low type, so is that of the tumour. I cannot but

think that many of the able minds which have been engaged in studying cancer, in its minute anatomy, have failed to make an adequate impression upon practical surgery, because they have been led away to look on cancer as a thing quite different from any of the ordinary structures of the body, instead of a perverted form of a natural structure. And I am sure that their views, carried out to their legitimate conclusion, would lead us to despair of any remedy for cancer but the knife, or other agents of destruction. Whereas, if we regard the cancer-cell merely as a perverted lymph-cell, we shall never rest until remedies are found which will influence it to a more healthy type.

I am sure we neglect too much the auxiliary treatment of good tonics, especially mineral tonics, good air, and abundant food, with proportionate exercise; and we should have slower tumours, and fewer relapses, if we compelled the attention of our patients to these matters.

Whether chemistry, combined with the microscope, will ever lead us to the knowledge of how best to effect our purpose, is more than I can say. The study will, at all events, lay open many valuable truths—it will amply repay any one who can give time to pursue it. The actions of many medicines, may I not say most, are involved in obscurity; and we prescribe them on grounds which our utmost efforts cannot rescue from the taint of empiricism. Microscopic chemistry will solve some, at least, of these problems. For example:—The diuretic power of bitartrate of potash is explained when we see the force with which it dissolves the epithelial cells of the kidney; its value in certain conditions of the liver is similarly explained. Ether is not only useful for its stimulant properties (the result of its rapid combustion, as chemistry has taught us), but also for its expectorant action, which is due to its solvent power over the bronchial epithelium: for this knowledge we are indebted to the microscope; and many other valuable results will reward those who apply themselves to it.

A word or two with regard to local treatment, after operation for the removal of tumours. A rapid cure is of the highest importance: it is obtained with less inflammatory action, and is so far less favourable to the plastic exudations in which secondary growths will spring up. I do not believe that suppuration is at all beneficial as a preventive of relapses, nor can I conceive on what imaginable grounds such a theory could rest. To obtain union as rapidly as possible, it is not enough to secure all bleeding vessels at the time; we must also prevent the possibility of blood lodging under the flaps; and

we must do this without exerting such pressure on the latter as will either provoke reaction or interfere with healthy circulation in them.

The mode of dressing I adopt is as follows:—Let us suppose an amputation of the breast. I insert a wire suture at every inch; having twisted them, I cut the wires off at about an inch from the twisted portion; when this is completed, and the edges of the wound lie nicely in contact, I lay along each side of it, and parallel with it, two large compresses of lint filled with soft cotton, taking care to get their edges under the ends of the wire: these compresses are for the purpose of making elastic pressure all along the sides of the wound, thus preventing any accumulation of blood under the flaps; and they also interpose between the skin and the cut ends of the wire sutures, and prevent chafing; over the track of the wound a wet compress can be laid, and the whole secured by a few turns of a roller, applied with moderate tightness. If there has been any dissection of glands from the pouch of the axilla, a sponge rolled in lint, or a handful of cotton, can be similarly used, to prevent accumulation of blood; and when the arm is brought to the side, sufficient pressure is made. A little ingenuity will adapt this mode of dressing to many operations. I have used it in amputations of limbs, castration, the removal of all tumours, and for the dressing of scalp wounds (omitting the stitches, or inserting as few as possible), and I have found it most useful. One advantage it possesses is, that we can easily inspect the line of wound, and sponge it clean without disturbing it: blood in the wound is the great cause of delay and danger after all operations—it prevents adhesion, causes suppuration, and tends to produce phlebitis and purulent absorption, or angioleucitis; and, as this mode of dressing prevents its accumulation, it so far diminishes the risk of operating.

ART. XVI—*On a New Sign of Post-partum Detachment of the Placenta.* By JOHN CLAY, M. R. C. S., Senior Professor of Midwifery, Queen's College; and Surgeon Accoucheur to the Queen's Hospital, Birmingham.

THE rules usually given in obstetric manuals, and text-books, for the management of the placenta, after the birth of the child, are:—to wait for a pain; or, to carry the finger along the cord to the os uteri, and, if its root can be felt, it may be fairly assumed that the placenta is thrown off, and may be easily extracted by gentle traction of the cord, with the aid of external manipulation. If these instructions be faithfully carried out,



can we rely upon the facts elicited as infallible proofs that the placenta is separated from the uterus? Pain may mislead, as it frequently arises from other causes than contractions of the uterus; and even if the insertion of the cord can be felt, it is not always conclusive on this point, as the root of the cord may sometimes be felt when the uterus is in a flaccid condition, by using moderate traction on the cord, and yet the placenta be not thrown off. Besides, the patient often lustily complains of the smarting pains caused by the frequent examinations deemed necessary to ascertain the fact; and often she positively forbids such a mode of interference.

Four years ago I was led, from these causes, to investigate the subject, with the view of improving, if possible, upon the old mode of managing the deliverance of the after-birth. I thus ascertained certain facts, from which I came to the conclusion, that a very simple sign existed by which the separation of the placenta, after the birth of the child, might be indicated; and, having tested it in upwards of nine hundred cases, I hope I may be considered to be fairly entitled to lay the results at which I have arrived before the profession.

Before dividing the umbilical cord, I always apply two ligatures, and make both sufficiently tight to prevent the occurrence of hemorrhage. If the maternal part of the cord is now examined, it will be found to be in a flaccid condition, and almost free from blood; but if it be again examined, at an interval, say from one to three minutes, it will be found to have acquired increased specific weight, and that the vessels are more or less filled with blood. The one fact may be ascertained by poising the cord on the fingers; the other by slightly grasping the cord near the vagina, with the thumb and fore-finger of the left hand, and, with the fingers of the right hand, suddenly compressing it, when a well-marked sense of fluctuation is perceived underneath the fingers of the left hand,—a kind of resilience similar to the feeling produced when an elastic tube filled with fluid is suddenly compressed.

When the placenta is thrown off, or sufficiently detached to give rise to a tolerably free hemorrhage, the cord loses its increased specific weight and the hydrostatic property just mentioned. These phenomena occur so invariably, that *the loss of the previously acquired hydrostatic properties of the cord after the birth of the child constitutes the sign of detachment* previously referred to.

The whole of the phenomena are manifested in three stages, viz.:—1st, a state of flaccidity; 2nd, a state of repletion; 3rd, a state of flaccidity.

If the umbilical cord be tightly grasped by a spasmodic

contraction of the os uteri, or by irregular contractions of the body of this organ, the *loss* of the particular hydrostatic properties may be delayed for a brief interval; but in a few seconds the spasm subsides, and those phenomena are produced which indicate the separation of the placenta, and that this structure may be safely extracted. These signs are not, of course, always equally marked in every case,—often requiring experienced tactile management, in order to detect their presence. When the uterus is in a flaccid condition, the phenomena are manifested in a very slight degree, but are still perfectly reliable. On the other hand, when the uterus is contracted, with some degree of firmness, on the placenta, they are so well marked that the most inexperienced may readily detect them. In cases of partially adherent placenta, the disappearance of the hydrostatic properties, after being once fully developed, and the failure to deliver the placenta by the usual manipulations, have always indicated to me the necessity for promptly adopting artificial detachment by the introduction of the hand. In twin cases, if the cord is firmly tied, I have invariably found that the signs persisted until the birth of the second child. In one case, where the hydrostatic properties disappeared, after being well marked, before the birth of the second child, I found, on examination, that the corresponding placenta was detached, and I at once removed it, which otherwise would probably have been suffered to remain. Neither mother nor child incurred any risk.

It sometimes occurs that the placenta is separated simultaneously with the birth of the child. In this instance, the first series of phenomena may be absent; and it may be prudent to wait before proceeding to extract the placenta, although it may be generally effected with safety.

The practical value of the application of these facts to obstetrics is obvious, as by merely compressing the cord in the manner previously indicated, the precise time of separation may be easily ascertained, the placenta at once extracted, and the patients thus freed from those frequent annoying examinations usually employed. The prompt delivery of the placenta, on the first efforts of the uterus, is very important, as this organ contracts then more efficiently, and the risk of hemorrhage is not so great, and it may be fairly assumed that the puerperal convalescence is not so protracted as under a more dilatory proceeding.

To students, or inexperienced practitioners, it might be a safe instruction to impart,—not to interfere in the extraction of the placenta so long as the hydrostatic properties herein defined are persistent.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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1. THE Fourteenth Report of the Commissioners in Lunacy for England and Wales comes up to the 31st of March of the present year, and, like its predecessors, is an official document of the greatest interest, the several matters embraced in it being of more or less importance, and all discussed by them in the usual matter of fact and independent spirit. Amongst the contents of this valuable Report are sections under the following heads, each of which is fully considered, and important details given in connexion therewith, viz.—“Number of Insane Persons in Asylums, &c.; Licenses and Changes in Proprietorship; Average Weekly Cost in Asylums and Hospitals (for the Insane); County and Borough Asylums; Lunatic Hospitals; Metropolitan Licensed Houses; Houses receiving Pauper Patients; Provincial Licensed Houses; Military Asylum; Insane Soldiers set at large in the Streets; Single Private Patients; Murders by Patients; State Asylum for Criminal Lunatics,” &c.

In addition to the above, is a very copious appendix, occupying so many as 56 out of the 157 pages of the Report in its entirety. We shall on the present occasion dispose of our limited space as best we can, by referring as concisely as possible to the more leading particulars of some of the foregoing subjects, commencing with the—

*Borough and County Asylums.*—These numbered 38 in all, and had a total population, on the 1st January, 1860, of 17,432, of whom 7829 were males, and 7950 females. Of the total number, as above, 227 were “private” patients, thus leaving the “pauper” class at the figure of 17,205. The total discharges of both denominations, during the year 1859, were 2929. The number recovered was 2120; deaths, 1712; and suicides, 7: those remaining under treatment on the 1st January, 1860, being 17,432, as above stated,—the number that was deemed curable being only 1952.

In regard to the expense of maintenance, we find that the highest average weekly cost per head was 12s. 8½d., viz., at the Warwick County Asylum, with an average daily number of patients of 304; and that the lowest was 6s. 8½d. at the Birmingham Borough Asylum, with an average daily number of 353. The new County Asylum for Beds, Herts, and Hants, com-

menced operations in the early part of the present year, under the medical superintendence of Mr. Denne; it will accommodate 500 patients, and the estimated cost of the building was £65,000. The quantity of land attached to it is unusually large and liberal, being so many as 260 acres, and this too of the best quality, besides affording extensive views in every direction, two primary conditions for such an institution. An acre to every four patients, or 25 to each 100, the Commissioners themselves would deem a pretty fair allowance; here, however, we have, and with much satisfaction we now record it, more than double what has been suggested in this all-important matter of Asylum management, which augurs well for the generous spirit in which this new County Asylum will be conducted. Another item worthy of special note in reference to this establishment, one which we opine will be a model asylum in these countries, is that the tables are to have mahogany tops, as also that the seats are to be backed, a most essential matter for the comfort of the patients; and, further, that an abundant supply of "Windsor Chairs" is to be provided. We wish all success to this new institution, the Visiting Committee of which deserve the highest commendation, for having commenced their duties thus benevolently, and so entirely in accordance with the humane spirit of the age, as regards the treatment of those who are the subjects of so grievous and deplorable an affliction as insanity. The Commissioners close their special Report on this Institution by observing—"That the general arrangement appeared to be convenient, and well calculated for the treatment and comfort of the inmates; and the excellent manner in which all the works have been executed is no doubt due to the continued vigilance and attention of the Committee of Visitors during the progress of the works."

The next new Asylum referred to by the Commissioners is that for the county of Northumberland, situated near the town of Morpeth, which was opened for patients in March, 1859. It is designed to accommodate 210 inmates, exclusive of 22 beds in the infirmaries. Attached to it are 99 acres of land, which is also a very laudable and handsome out of door provision for the recreation, health, and employment of its patients.

The Report informs us that the Commissioners and the Committee of the Surrey County Asylum, an institution already containing so many as 955 inmates, had been in correspondence about an additional building, to accommodate 660 more patients, at a cost of £53,500, to which, however, the Commissioners most properly objected; and declined, accord-

ingly, to recommend the plans to the Secretary of State for approval, the Committee of Visitors being so unreasonable as to propose "to place 1600 patients upon a site hitherto considered by no means too large for less than half that number." We trust the Commissioners will continue firm to the last in opposing so unjustifiable a proceeding as this, not simply on the grounds of insufficiency of land, but on those still higher, and of the utmost moment in a humane and curative point of view, namely, the accumulation of the insane under one roof in such vast numbers as being only calculated to be productive of the most pernicious results, and to bring shame and disgrace upon the country at large, for its inhumanity in thus crowding its insane together, and this too on the miserable and pitiable plea of the most wretched and mistaken economy that was ever enacted. The Hanwell and Colney Hatch Asylums are standing monuments of a most extravagant and enormous expenditure of the public money in a futile attempt to treat the insane *en masse*, after the "cheap and nasty" system; and now further to add to that generally denounced and much to be deprecated system, would indeed be disgraceful, and only too well calculated to lower us in the estimation of surrounding nations.

*City Asylum.*—Plans for an Asylum for the City of London having been submitted to the Commissioners, the same were under consideration, with every prospect of one being erected, without delay, for 300 patients, near Dartford, which will be a long-needed and wished-for institution.

*St. Luke's Hospital.*—The Commissioners have, for a series of years, been using their best and most unwearied efforts to effect desirable changes and improvements in that "dreary" and wretchedly-located institution yecept St. Luke's Hospital. A recapitulation of those persevering efforts for ten years, from 1850, is given in this report, in an appendix, the sum and substance of which are, that, although the accommodation had been improved, and the medical and other attendance was unexceptionable, yet the number of patients had fallen off during the last ten years from 225 to 155, which was to be attributed, in the opinion of the Commissioners, "to the unfavourable locality and dreary aspect of the building, an opinion deriving support from the fact, that during the same period there had been a considerable increase of patients in the majority of Lunatic Hospitals in England;" and, accordingly, the Commissioners go on to say, that they "still hope the Governors will give serious consideration to the recommendations they (the Commissioners) had

repeatedly made respecting the expediency of removal to a more favourable site."

Over and over again, in these Annual Reviews "on Insanity and Hospitals for the Insane," have we felt it our bounden duty to support the Commissioners in their untiring and most praiseworthy, but unfortunately useless, endeavours to ameliorate the condition of the unhappily-circumstanced insane patient within the "dreary" walls of St. Luke's. We cannot but greatly respect the Commissioners for their persistence in so righteous a cause,—one which calls aloud for the sympathy of every one having the least spark of philanthropy. But, in a manner least expected, the state of things in that institution, domiciled in the savoury and stirring *locale* of Smithfield! (only to be equalled by our own metropolitan asylum, the Richmond, for infelicity of situation), is, by a retributive justice, coming gradually, but surely, to an end,—the public voice having been heard to such an extent, that patients are ceasing to be committed to its charge; and this, at such a rate, that the *famed* St. Luke's will stand out in bold relief as having died of inanition. We rejoice greatly at the prospect of this consummation, which, however discreditable it will be to its incurable Governors, charged with a most solemn and important duty, and with means at once ample and available to have built a new Hospital elsewhere, will, nevertheless, have been for the decided benefit of the insane patient, by blotting out from the list of hospitals a receptacle so frequently and deservedly pilloried for its shortcomings and failures both of omission and commission, on behalf of those who of all others should have secured for them the kindest, most liberal, and improved treatment.

*Metropolitan Licensed Houses.*—The Report of the Commissioners here enters largely, and very impartially, into the present condition of each of the "Metropolitan licensed houses," which we find amount to 38, the larger number of them, viz, 33, receiving none but "private" patients; and the remainder 5, both "private" and "pauper" inmates. The total number of patients of the "private" class in these institutions collectively, it appears, was 1287; and of the "pauper" class, 1264; making a grand total of 2551. The discharges amounted to 1426; the recoveries to 354; the deaths to 286, exclusive of 4 suicidal casualties. It struck us forcibly, on reading over the list of the names of the proprietary of these "licensed Metropolitan" establishments, within whose walls are contained so large a number of the insane, that so many as 8 should be under the



designation of "Mrs.," six under that of "Miss," and, though last, not the least in importance, 5 who are styled simply "Mr.," having no professional qualification whatever. We know of nothing more calculated to degrade "licensed" asylums, and so lower them in general estimation as to make their extinction desirable, than this system of directly sanctioning totally unqualified parties, however estimable and respectable they may be individually, thus openly to make merchandize of insanity, and so bring its scientific and humane treatment into great and well-merited contempt. If the Commissioners made even the least semblance of objecting to lay persons of either sex thus profiting by the insane, it would so far free them from giving official countenance to so pernicious a course of procedure; but, inasmuch as they are perfectly silent on that head, it must be taken for granted that it has their consent, which we cannot but strongly censure. This is not the first time for us to call attention to so highly reprehensible a state of things in respect of private asylums, nor shall we cease our protestations in connexion therewith until it is made a *sine qua non* that none but duly qualified members of the profession should have the responsible charge of the treatment of the insane of any class.

*Provincial Licensed Houses.*—The "provincial licensed houses" are also fully reported upon, and, with a few exceptions, like the "Metropolitan," satisfactorily. Their total number is 72; and their inmates, in the aggregate, amounted to 2465; the discharges during the year were 855; the recoveries, 365; deaths, 182; and suicides, 4. The same remark, in the way of animadversion, holds good with the "provincial" as with the "Metropolitan" asylums, as to unqualified persons being at their head, of whom there are so many as 28; namely, 16 males, and 12 females.

*Military Hospital for the Insane.*—This Report of the Commissioners animadverts strongly upon the fact that, up to the present time, and notwithstanding the Commissioners' repeated remonstrances with, and appeals to "the authorities of the War Office," no steps have been taken towards providing a public hospital for "insane military officers and soldiers;" and, again, the Report states: "The only establishment for the insane, in connexion with the army, is the Lunatic Hospital, in Fort Pitt, Chatham, which is rather a place for observation and temporary probation, than one for care and treatment." And, further on, we find what we would have scarcely given credence to, only that it appears in the pages of this blue book, that the War Office authorities were actually so lost to all common hu-

manity, and dead to every sense of what was due to public decency and safety as to "set insane soldiers at large in the public streets, with a view to throw the burthen of their maintenance upon the parish in which they might be found wandering!" Could any thing be more inhuman, or disgraceful, than such a proceeding as this on the part of the Government of these realms, or more calculated to make us appear, in the eyes of foreigners, divested altogether of the feelings of a Christian nation? We are really ashamed to think that such a scandalous state of things towards the insane of the army is still permitted to pass by unnoticed by the House of Commons. In our review last year, as well as on former occasions, we dwelt upon this most extraordinary and unjustifiable neglect towards those who have risked their lives in the cause of their country, and who, becoming the subjects of insanity, when especially every attention should be paid to their unhappy condition, and every appliance liberally supplied to meet the necessities of their case, are, instead thereof, thrown pitilessly and miserably upon the chance protection and cold charity of the workhouse, by being made wanderers on the public streets! This is really unbearable; and, for the honour of the country, so great an opprobrium should not be permitted to continue another Session of Parliament without being prominently noticed by some public-spirited and independent members in both Houses, (Why not Lord Shaftesbury, the excellent Chairman of the Commissioners, in his place in the House of Lords?) in order to effective means being taken at once to cure this crying evil.

*Single Patients.*—A considerable number of cases of improper treatment of many "single private, and single pauper patients," is enumerated in the Report; and the effective measures taken by the Commissioners to remedy the same, speak well for the constant watchfulness they exercise in the discharge of this important portion of their duty.

*Murders by Patients.*—Several pages of the Report are occupied with the particulars of two murders committed by patients—one being, unfortunately, a member of the profession, named Dr. Pownall. This patient had suffered from repeated attacks of mania since the year 1839, and was repeatedly obliged to be placed under restraint. Strange to say, Dr. Pownall had been the proprietor of an asylum, and twice made violent assaults on his own patients—breaking a poker upon the head of one, and assaulting the same patient a short time afterwards with a bludgeon, under the delusion that he was a party to introducing poison into his food; and shooting another in the leg, which was obliged to be amputated, the ill-starred sufferer dy-

ing the following day. After this last occurrence, which took place in June, 1854, he was put under treatment as suicidal and as dangerous to others, and remained so until the October following, when he was discharged, "not improved." We have no further account of him until the year 1859, when he became again depressed in the month of January, and his old delusion of poison re-appeared. In March following, he attempted suicide, by taking chloroform. In April, he went into the bedroom of his mother-in-law, and struck her violently on the head with a poker, wounding her severely; and afterwards, getting possession of a gun, he rushed with it into her room, but some men, fortunately happening to be in the house, took the gun from him, before he could do any mischief; immediately after this, he was placed under the care of Dr. Davey, of Northwoods, with whom he continued until the 10th of August following, when he was discharged, "recovered;" on the 30th of that month he murdered the servant of Mr. Leete, a surgeon, in Gloucestershire, by cutting her throat with a razor. It appears, on leaving Northwoods, he had been placed to lodge with Mr. Leete, accompanied by an attendant, whom, however, he was permitted to regard simply as a servant, and whom he had, of his own accord, discharged. For this offence, Dr. Pownall was put on his trial, and acquitted on the ground of insanity, and is now confined as "a criminal lunatic" in Bethlehem Hospital.

The Commissioners afford satisfactory evidence to our mind that they had, from data before them, cautioned Dr. Davey as to the danger of giving an immediate or "unconditional" discharge to Dr. Pownall, suggesting to him, at the same time, that "such discharge should be preceded by a leave of absence, under the 86th Section of the Act, whereby the patient's power of self-control might be tested for some little time." Notwithstanding this prudent caution on the part of the Commissioners, Dr. Pownall, as is manifest from the foregoing history of his case, was "unconditionally" discharged from Northwoods, and which resulted in the sad catastrophe, shortly given above.

*State Asylum for Criminal Lunatics.*—The State Asylum for Criminal Lunatics is mentioned, in the Report, to be approaching completion at Broadmoor, on Bagshot Heath, a distance of about thirty-three miles from London, two from Sandhurst, and one from Wellington College, near which is a railway station. The building, a three-story one (which is contrary to the best received opinions), will accommodate 500 inmates (400 males, 100 females), and has 290 acres of land attached to it. We regret to find it stated that the resident me-

dical superintendent's house is to be in the centre of the building, instead of being a detached one altogether. We had hoped the Commissioners would have taken due care to have this most desirable improvement carried out in an institution which must necessarily have been so much in their own hands as to ability in accomplishing anything of this kind, and which would have been so excellent an opportunity of affording a precedent for the future to all other asylums in this most important matter of detail.

Annexed is a summary of the number of private and pauper insane patients in England and Wales under treatment in public asylums, hospitals, and licensed houses, on the 1st of January, 1860:—

	Private.			Pauper.			Total Lunatics.
	M.	F.	Total.	M.	F.	Total.	
County and Borough Asylums,	121	106	227	7,829	9,376	17,205	17,432
Hospitals, . . . . .	998	754	1,752	120	113	233	1,985
Metropolitan Licensed Houses,	703	639	1,342	194	408	602	1,944
Provincial ditto, . . . . .	874	732	1,606	377	373	750	2,356
	2,696	2,231	4,927	8,520	10,270	18,790	23,717

The Statistical Returns, &c., &c., contained in the Appendix, are very numerous and various, and will be found interesting records for reference, having been prepared, evidently, with much care, as has been the Report as a whole,—its pages affording the fullest proof of the Commissioners fulfilling their important duties with great ability, together with very commendable diligence, and much even-handedness to all parties concerned.

2. The General Board of Commissioners in Lunacy for Scotland, in their Second Annual Report, dated 30th of January, 1860, inform us of the resignation of the Earl of Minto, the original Chairman of the Board, and the appointment of Mr. Forbes Mackenzie in his stead, who, if he will only follow the example of the Chairman of the English Commissioners, the Earl of Shaftesbury, cannot fail to give satisfaction, and be a benefactor to the country in so important and responsible a post of public duty.

The Commissioners, in their first Report, were indisposed to admit that there was any real increase of insanity in Scotland, observing on that head:—

“It is probable that the increase of insanity is, in a great degree, only apparent, arising from more attention being directed to the



subject, and the consequent discovery of a greater number of persons affected with the malady."

Another year's experience, however, has changed their opinion rather on this moot-point, the present Report stating that—

"It appeared from the Report of the English Commissioners in Lunacy, that the number of the insane in England and Wales was undergoing a steady and serious increase. From the data before us, we fear that in Scotland the same distressing fact must be admitted. They show that the number of pauper lunatics which, on the 1st of January, 1858, amounted to 4737, had increased to 4980 on the 1st of January, 1859. We have no means of obtaining reliable returns of the numbers of the private insane, with the exception of those placed in private asylums; but there is great reason to fear that they are increasing in a similar ratio."

The total number of the insane in Scotland on the 1st of January, 1859, was 7878; of whom 2898 were supported by private funds, and 4980 by parochial rates. The Commissioners incline to the opinion that public asylums are preferable to proprietary ones for private patients—"preference being given," they remark, "by the friends of private patients to public asylums over licensed houses, which was a strong argument in favour of providing accommodation of a superior kind in connexion with the district asylums."

The Commissioners have strong objections, and very properly, to the "residence of pauper lunatics in licensed houses and lunatic wards of poor-houses, as well on grounds of economy as on those of general treatment,—the maintenance of patients, even in the lunatic wards of poor-houses, being less economical than their maintenance in public asylums."

Again, they observe thus eloquently, and much to their credit, on this head:—

"The fundamental principle on which these establishments (Poor-Houses) are conducted—that of affording a test for poverty, and to provide for the poor in the most economical manner—is antagonistic to that which ought to regulate the treatment of lunatics, and which, briefly stated, is the provision of every comfort which can reasonably be demanded to lighten the burden of, perhaps, the greatest calamity which can afflict humanity. . . . The treatment of the patients in these establishments can scarcely, in any instance, be regarded as in harmony with the humane views of the day. There is generally a great deficiency in cheerfulness and comfort within doors, a prison-like aspect about the airing grounds, and an almost total absence of the means of employment, both within and out of doors. Yet, notwithstanding the unfavourable

contrast which poor-house lunatic wards must, in these respects, bear to asylums, the cost of the maintenance of patients placed in the former class of establishments, especially when no restriction on admission exists in connexion with the form of the malady with which they are affected, is, perhaps, as high as that of those placed in the latter."

We entirely agree with the Commissioners in their views on the above subject, and are very glad to find that they are using their official influence with so much spirit in denouncing the locating of the insane in any receptacles except those specially adapted and arranged for their due comfort and care; which confessedly is not the case, and necessarily could not be, in a work-house, the very name of which, with its associations, is calculated to have a prejudicial effect on the future prospects of the unfortunately-circumstanced lunatics within its precincts.

The Report, in respect of those patients in the "lunatic wards of poor-houses"—who, in nine cases out of ten, are doubtless entirely hopeless as to cure, being the subjects of dementia, amentia, idiocy, &c., nevertheless requiring judicious and liberal treatment—proposes that the accommodation for them "should consist of cottages or separate buildings of a simple character, generally placed near to and in connexion with asylums, and in which the patients would enjoy an extended degree of liberty, from being in circumstances much more closely resembling those of ordinary life than can be realized in asylums as at present constituted."

With reference to the expenditure for pauper lunatics in Scotland, we find it stated that the average cost in asylums was £21 18s. 2½*d.*; in poor-houses, £13 13s. 10*d.*; and in private houses, £7 12s. 10*d.*

There are eight public asylums in Scotland, in all of which private as well as pauper patients are received; they are as follow:—The Aberdeen Royal Asylum, Dundee, Dumfries, Edinburgh, Elgin, Glasgow, Montrose, Perth.

The Commissioners give detailed reports of each of the above, together with the licensed houses, which amount to nineteen; and also go with much particularity into the cases of single patients, and those in poor-houses.

A most voluminous and laboured appendix is attached to this Report of the Commissioners, the ranges of separate columns and figures in the almost innumerable tables connected with which would be exhaustive to the last degree to endeavour to master. This appendix, and its accompanying tables, commence at page 118, and extend to page 225, all closely

printed; so that the array altogether is assuredly of the most imposing character, and, at all events, must have been highly advantageous as to employment and remuneration respectively to office clerks and to the printer, if not to the readers, of such severely elaborated statistical documents.

But, unable ourselves to apply to any usefully readable purpose, in a necessarily brief review like this, the many points so ably discussed in this Report of the Scotch Commissioners, we heartily commend it in its entirety to those of our readers who take an interest in the deep things of psychology, as applied practically and statistically, well assured that they will be amply repaid for the time they must spend in a careful perusal of its well-arranged and minutely-classified contents. And here it occurs to us to remark, that we consider all blue books of this kind should be freely circulated, at least amongst those engaged in the superintendence of public institutions for the insane, —there being many valuable observations and facts embraced in them, thus brought together in an official and authoritative form, which would be most important and desirable to be in the hands of every medical superintendent of a public asylum in Great Britain and Ireland. The Report of the English Commissioners in Lunacy is, we are aware, pretty freely circulated, after the manner we have here indicated, being thus distributed, as we understand, at the expense of the country, and no more legitimate expenditure could be incurred; but, as regards the Scotch report, we have reason to believe that the shabbiest system possible of economy is pursued towards it and its authors by the Treasury, it being to a certain extent almost a sealed book, from the very limited *free* circulation which is enabled to be given to it, and which certainly should not, and we hope will not, be continued. The biennial blue book report on the state of the insane in this country—a report second to none for great interest and ability, as these pages have so often borne witness to—is distributed much less parsimoniously than its Scotch sister, but not to the same extent as its English relative. It is high time that this stepchild system should cease and determine, and the three “blues” be put upon the same liberal footing of circulation, which at present is so unfairly apportioned amongst them.

3. To keep our readers *au courant* in all matters and events of the year, bearing upon the subject of this review, we have embraced in our list an Act of the last session of Parliament for making “better provision for the custody and care of criminal lunatics” in England and Wales.

So long since as the year 1845, this country was fortunate enough to obtain the passing of a measure of a similar and much-required provision, and for the obtaining of which, ultimately, the principal credit is due to the authorities of a northern asylum for their unremitting and energetic efforts with Government after Government, for a series of years, until this desideratum was accomplished, by the establishing of the State Central Asylum, at Dundrum, for the due care and confinement of the criminal insane of Ireland, whose presence amongst the ordinary inmates of the district hospitals for the insane was felt, and this for obvious reasons, to be a serious grievance and drawback to these invaluable establishments.

We need not here repeat what we so often have had the pleasure of noticing in these annual reviews, the exceedingly satisfactory working of the Central Asylum at Dundrum, under the very able and judicious superintendence of its resident physician, Dr. Corbet, who has been at its head since its first opening, and secured for it a character of such high repute and usefulness as to make its *alter ego* in the sister kingdom a long-wished-for consummation, the Commissioners of Lunacy, for a lengthened period, there having been agitating and re-agitating in their reports, as reproduced in these pages, for the establishment of a similar receptacle in England. It is seldom that Ireland has been favoured in anywise before her all-powerful sister, the former being satisfied with the "crumbs" which fell from the latter's bountifully-supplied table; but here, in this instance, Ireland certainly has had the advantage, and this, too, for no inconsiderable time. In the course of the few further remarks we shall have to make on this portion of our review, we shall be enabled to show that the Irish Act is of a much more satisfactory and preferable kind than this one for England, which latter contains fifteen sections, as follow:—

1. That Her Majesty may appoint an asylum for criminal lunatic.

2. Secretary of State may direct criminal lunatics to be confined in the asylum.

3. Nothing in this Act to affect the authority of the Crown to make other provision for the custody of a criminal lunatic.

4. Secretary of State to appoint council, medical superintendent, assistants, servants, &c., and remove them at pleasure; also, with the approval of the treasury, fix the salaries of the officers, &c.

- 5 & 6. Secretary of State to make rules for the government of the asylum, laying the same before Parliament.



7, 8, & 9. Provide for the removal and discharge, and absence on trial, of lunatics.

10. Provides for the conveyance and maintenance of the lunatics.

11. Lunatics escaping may be retaken by superintendent, &c.

12. Parties rescuing or permitting escape of lunatics shall be guilty of felony, and liable to penal servitude for four years, or imprisonment for two years; and any officer or servant carelessly allowing a lunatic to escape, to forfeit a sum not exceeding twenty pounds, and not less than two pounds.

13 Any superintendent, or other person employed in asylum, ill-treating the inmates, or wilfully neglecting them, to be guilty of a misdemeanor, and subject to be indicted and fined, or imprisoned, or both, with or without hard labour; or to forfeit, for every such offence, on a summary conviction before two Justices, any sum not exceeding twenty pounds, nor less than two pounds.

14 & 15. Commissioners in Lunacy to visit asylum once or oftener yearly, and report to Secretary of State.

These particulars of the foregoing Act having been thus stated, it only remains for us to say that we consider its punitive sections—making such minute provision for the “penal servitude, fining, indictment, and imprisonment, with or without hard labour,” of “the medical superintendent,” with his nurses, attendants, servants, or other persons (for thus exaltedly with his own subordinates and menial servants is that official classed)—to be in the last degree insulting and gratuitously humiliating to him, as a member of an honourable and humane profession, holding a most responsible and confidential position, and in his person a scandalous libel upon the profession generally, as if any of its members could, by any possibility, thus act; and even, for argument’s sake, granting that he should, the common law of the land would be quite sufficient to fall back upon for his due punishment, without thus singling out him, and his peculiar office, so invidiously, together with categorizing him so offensively with mere servants. Like Cæsar’s wife, he should be considered above suspicion; and this much we feel called upon to say, that Parliament has made a grand mistake in this kind of lunacy legislation, which is only calculated to throw us a century back in the treatment of the insane, by thus degrading and branding the head of an asylum, instead of everything being done to raise that functionary in social, moral, and professional posi-

tion, which will alone be the means of securing for the insane truly humane and considerate treatment, and not by such disgracefully penal enactments, as given above. We trust that the Commissioners in Lunacy had nothing to do, directly or indirectly, in the framing of the sections we have now referred to. Certain, however, it appears to be, that some party or parties must have been behind the scenes—some foe to the insane, though believing himself to be otherwise—suggesting the provisions in question, and which the sooner repealed, the better it will be on every account. In Ireland, we are rejoiced to be enabled to state that no such felon-like clauses are in the Act, passed in 1845, establishing a central asylum for criminal lunatics, nor in any of the legislative enactments connected with our public hospitals for the insane generally; and, to the present time, in neither the former nor the latter has a case ever arisen requiring the aid of the criminal law being brought to bear against the humblest servant, much less the medical superintendent; and hence it was that, in the Bill introduced by Lord Naas, when he was Chief Secretary for Ireland, for amending the lunacy laws in this country, and which in our last annual review we did not fail to characterize as it deserved, that, inasmuch as it contained clause after clause of a penal nature, in common with innumerable other unpopular and totally unnecessary novelties, it was mercilessly dealt with in its progress through the House—so strongly expressed was the public mind against it—and its author obliged ultimately to withdraw it, which, it is to be hoped, will be a warning to all future Chief Secretaries, when essaying improvements in our lunacy laws in Ireland.

In concluding these remarks on this questionable Act, we had intended to suggest that the status of the medical superintendent of the asylum for criminal lunatics as to salary, domestic accommodation, &c., should be such as to make the appointment a kind of promotion to the superintendents of the county asylums generally, who, as matters at present stand in these countries, have unfortunately no promotion or advancement to look forward to with any degree of certainty in their important and onerous vocation, which is both a great evil and a great hardship to men thus bearing "the heat and burden of the day." Here, however, is an opportunity for remedying in some degree this hard lot of medical superintendents; and we hope that the salary will be of that liberal kind as to make the appointment, with its other advantages, as nearly as possible equivalent to a commissionership in lunacy, which would

be found to be productive of the most salutary effects, both as regards the good management of the intended new Government asylum, and the best interests of the insane generally.

4. The January number of the Psychological Journal has eight articles, of varied interest and excellence, commencing with one entitled "Paradoxical Psychology," being, amongst other matters, a plea for the identification, generically at least, of *genius* and *madness*, *intellectuality* and *nervopathy*. The author in question is Dr. J. Moreau (de Tours), Médecin de l'Hospice de Bicêtre, who has undertaken the notable task above referred to, in a recently published work, whose title is: "*La Psychologie Morbide dans les Rapports avec la Philosophie de l'Histoire ou de l'Influence de Nervopathies sur le Dynamisme Intellectuel.*" The position taken by the Continental writer may be reduced, pretty nearly, to the following, viz:—That "every affection of the nervous system is identical, as to essential character, with the cerebral disorders of which the words *insanity* and *idiocy* sum up the innumerable symptomatological varieties;" and the opposite of this is ably maintained by the writer in the Psychological Journal. He contends, and we think with unanswerable correctness, that, so far from being normal, the hyper-excitation of the nervous system which is either symptomatic, or the cause of insanity, is a morbid condition, and to be ever thought of and treated as such; and, after a prolonged and able historical examination of the subject, the writer's conclusions are thus given:—

"Are we then to admit that the relations which exist between genius and insanity are so inextricable that from whatever point of view we observe them, however thoroughly they may be analyzed, we are compelled, in expressing them, to have recourse to a paradox? Is it true that the paradox of which we have sketched the history has a legitimate claim to be admitted within the boundaries of psychological science? We believe not.

"It is obvious that if we use expressions which tend to confound together two different classes of phenomena, nothing but confusion can result. Gradually and insensibly, as morbid may shade off into healthy states, or healthy into morbid; nevertheless, the two states exist. The limitation of our present information respecting their points of departure the one from the other, affords no justification for the adoption of any hypotheses which confound the one state with the other at the root. Speculation of this kind, in place of hiding, impedes research, by substituting foregone and hypothetical conclusions for suggestive observation."

The above remarks will commend themselves to every rational mind, and prepare our readers to endorse the following sentiments, with which our notice of this paper must conclude:—

“Now we affirm that the *quasi*-high intellectual states which are observed in certain morbid conditions of the nervous system, are invariably characterized by a preponderance of the automatic over the ratiocinative actions of the brain. That there is with these states a greater or less loss of that co-ordination of the faculties which is necessary for the most perfect intellectual action. But to describe genius of this stamp as the highest manifestation of the intellect, is simply a perversion of terms. Wherever genius of any form is found associated with a morbid condition of the nervous system, there it may be predicated we shall find a more or less manifest determination from the normal action of the intellect in its entirety. In no respect is this more clearly remarked than in the preponderance of impulse over motive, which, as Coleridge remarks:—

‘Though no part of genius, is too often its accompaniment. For the man of genius lives in continued hostility to prudence, or banishes it altogether, and thus deprives virtue of her guide and guardian, her prime functionary, yea, the very organ of her outward life. Hence a benevolence that squanders its shafts, and still misses its aim, or resembles the charmed bullet that, levelled at the wolf, brings down the shepherd. Hence desultoriness, extremes, exhaustion—

And thereof cometh in the end despondency and madness!

Let it not be forgotten, however, that these evils are the disease of the man, while the records of biography furnish ample proof that genius, in the higher degree, acts as a preservative against them; more remarkably, and in more frequent instances, when the imagination and preconstructive power have taken a scientific or philosophic direction, as in Plato—indeed in almost all the first-rate philosophers, in Kepler, Milton, Boyle, Newton, Leibnitz, and Berkeley.’

“Concede Dr. Moreau’s category of theories by means of which he arrives at the conclusion that idiocy, insanity, scrofula, rachitis, the neuroses, and genius are congenerous; concede to him also that this of necessity leads to the proposition, that wherever the intellectual faculties are raised above the common level, it indicates a morbid condition of the nervous system; concede these things, and it would of necessity follow that Swift’s satirical demonstration, that madness is the source of all human genius, and of all the institutions of the universe, becomes a profound truth. As such, it is regarded by Dr. Moreau, who mentions it as an *instinctive* appreciation of the ‘truths’ for which he combats. Need we say more?”

Next in importance, if not, indeed, more important, is the



following article, entitled, "*Hysteria in connexion with Religious Revivals.*" We could wish that this document were in the hands of every person in the kingdom who has been, or who may be, brought into contact with the movement referred to; and which, as the writer states, having "originated in the north of Ireland is now extending itself widely in this country" (England). The information here afforded respecting the real nature and character of hysterical affections, in general, and more especially of those connected with religion, is most important; and, could it be brought before the minds of those misguided persons who have been lately so instrumental in producing and propagating such morbid states among their deluded followers and victims, might well lead them to blush, were they indeed accessible to any such feeling, for the monstrous part they have acted in this matter. The portion of the article taken up with the scientific and pathological view of the subject is much to the purpose, and the castigation inflicted on the pathological charlatans who have lately dealt in the delusions connected with "*Ulster Revivalism*" is as severe as it is merited. We regret that our space will admit of but a single quotation, as illustrative of the manner in which the writer deals with the practical part of his subject, but it will give our readers a just idea of the spirit and manner of the whole. It is as follows:—

"Now if we compare the foregoing account of hysteria with recent actual occurrences, we shall find a complete and remarkable coincidence between them. Starting from the fact that (in a community of persons mostly uneducated, mostly in the condition of imperfect physical tone induced by mill labour, and mostly possessing a dexterity in handicraft that would enable them to exercise a great degree of control over their muscles), an unusual interest has been stirred up with regard to the things which concern eternal life. It may next be observed, that this interest has been made a means of attracting large numbers of individuals to crowded places of worship, where they have been excited by the most energetic denunciations of their own lost and fallen state, as well as by threats of the Divine vengeance impending over them. It must be remembered that these denunciations and threats have reference, in the creeds in which the revival took its origin, not to actual, but to original sin; and that hence they were calculated to excite emotions of the utmost terror and despair, from which no way of escape would be pointed out by the preacher along the path of duty. The devotees would be instructed to wait for the Spirit of grace to descend into their hearts; to wait, not in action, not in striving after a holy life, but in contemplation of their own imputed sinfulness and impending destruction. The feelings hence arising would be intensified by the sym-

pathy of surrounding numbers, would be sustained by the iteration of the preacher, would be directed at no practical aim, would be held off from the muscular system by a sense of the decencies of public worship, as well as by the reflection that bodily flight affords no relief from mental terror. In a congregation thus situated, there will soon be an individual whose power of emotional self-consciousness has reached its limit, while the emotion is sustained by the awful words—the repetition of hell!—hell!—hell!—issuing from the pulpit. Then will come the hysterical cry, succeeded by the hysterical convulsion. When the convulsion abates, if the sensorium have been saturated by terror, by an anticipatory self-feeling of the torments of the damned, this feeling will display itself in action, prior to the return of consciousness as regards ordinary outward impressions. Broken words and imperfect actions will indicate the ruling fear; will have reference to Satan, and to flight from or avoidance of his snares. The conversation of bystanders, when relevant to this ruling fear, will serve to guide or modify the acted dream; and their uttered anticipations of coming relief and peace will, as the fear is exhausted, gradually realize themselves. Smiles irradiate the countenance, the Most Holy Name is heard upon the lips, and the somnambulist either awakes in a state of rapture and excitement, or sinks into the sleep that is demanded by her fatigued and enfeebled frame.

“In accordance with the principle already laid down, the occurrence of one hysteric fit, in a place of worship, will be exceeding likely to precipitate another, by abruptly breaking into the self-contemplative state. Moreover, if the preacher point out the person affected as one by whom saving grace has at that moment been received, as one predestined from eternity to conversion and final perseverance, the incident is eminently calculated to impress and convince his hearers, to add indefinitely to the power of his words, to arouse the most intense longing for a similar visitation, and to excite the most lively dread lest the grace sought for should be withheld. By both kinds of operation, hysteria is continually propagated and increased.

“Upon recovering from the immediate effects of the paroxysm, the state of the ‘subjects’ may admit of considerable variation. In some, even if not in many instances, the shock will be found to have dethroned the reason; and the unhappy patient will awake from somnambulism to fatuity or mania. In others, the original terror being completely removed by the assurances of the preacher, a state of feeling is induced, of which gratified vanity is the chief characteristic. The so-called penitent will converse fluently about her experience, describe her struggles and trials, her beatific visions, her eventual peace, her abiding assurance of salvation and eternal bliss, her profound repentance for her sins. She will seldom be ready to confess or bewail any particular transgressions; she will not be likely to afford any practical evidence of humility; and she will usually season her dish of marvels so as to suit the varying credu-

lity of her different auditors. She is jealous of her position as the *prima donna* of her chapel or her sect, and elaborates ingenious novelties by which to crush the pretensions of any intrusive *débütante*. However ingenious, she will become wearisome at last. The nine days allotted to terrestrial wonders will pursue their inevitable course, and will bring in their train a girl who escaped, in her vision, from two devils instead of one; or who can garnish the narrative of her flight by incidents from the *Mysteries of London* or the *Castle of Udolpho*. The first subject disappears from the scene, not to follow the example of Dorcas or of Lydia, but too often to lead a life concerning which her sometime hearers are glad to bury scandal beneath oblivion."

The writer glances, incidentally, at the subject in its theological aspect; and here also his observations are pertinent, and characterized by soundness of view, and respect for the inspired volume, as the great guide and standard in all such matters. We must, however, add, in fairness, that he appears to write with but imperfect information of the past history as well as the actual results of "the Revival," as is it popularly styled in Ulster. There is an air of hopefulness, as regards improved morals and religion among the population in those parts of Ireland where the movement has prevailed, as well as, anticipatingly, respecting its progress in England, on which the writer seems to calculate; but, from our own experience in the matter, we can by no means join in it. As a whole, we believe, the root of this evil—for such we conceive it to have been—was to be found in ignorance and delusion; and its fruit we are painfully convinced to have been that of bitterness and mischief, physical, moral, and spiritual. It is, however, now dead, and let it be buried; we could wish, with the appropriate motto, *requiescat in pace*.

The subsequent numbers of the journal present much valuable statistical information, on the subject of lunacy in general, the state in which it is at to be present found in the united Empire, and on the Continent, and the means of amelioration provided. There are also some highly interesting biographical sketches to be found in its pages, among which that of Pinel (p. 184), occupies a prominent and appropriate place. Our readers will find, also, an exceedingly valuable *resumé* of the psychological views of a young writer and scholar (Bain), who bids fair, shortly, to occupy even a still more prominent place in the world of scientific literature than that to which he has already attained. The chair, in the University of Aberdeen, to which Mr. Bain has just been elected, is, we must observe in passing, a high tribute, and we think a most just one, to his

remarkable attainments, and does credit as well to the government as to its nominee. When it is added that Dr. M'Cosh, of the Queen's College, Belfast—the voluminous writer on morals and ethics, and who distinguished himself, in 1859, by the public part which he enacted in, as well as the partial endorsement which he gave to Ulster Revivalism—was a candidate for the appointment referred to, our readers will, perhaps, the more appreciate these observations. Few more original and important contributions have been made, during the present century, to mental science, than those embodied in the two volumes of Mr. Bain which are here reviewed, and we heartily commend their perusal to our readers.

Our limits permit us but briefly to refer, before this notice closes, to the “Quarterly Retrospects,” under the head of “Psychological,” with which each number of the journal commences. And in making that reference we are compelled, in all critical candour, to repeat an observation made by us, in a former notice, as to the exceedingly indiscriminate, and we must add, in some respects, inappropriate character of these papers. While such subjects as “Sir J. K. Shuttleworth on Civilization,” and “The Times on Civilization;” and even “The Educational Tendencies of Volunteer Corps,” or “The Psychological Aspects of the Irish Exodus,” may be considered as germane to the assumed title of these communications, others occur, which, as it seems to us, look very like “filling-up-stuff.”

We might give examples of these but shall only call attention to that portion of the papers in question which refers to “Religious Services in Theatres” “the Social Evil,” and “the Midnight Prayer Meetings” (P. xxviii—xxxiv). We confess, that, notwithstanding the approval accorded by the writer to the most extraordinary proceedings in question, and the praise (although it be but faint), which he bestows on the authors and agents in their carrying out, our own views, founded, as we think, on principle, and confirmed by the actual witnessing of some of these exhibitions, are quite unchanged; and these views we acknowledge to be the very reverse of favourable. If a principle be good, it will always bear “pushing out:” if a practice be commendable, it merits and demands extension. Why not, then, push out the theatrical principle in the religious movement in question? Why should the *Victoria* be rented for the mob, and not the Haymarket or the Drury-lane Theatre, for the nobility and gentry? Push the principle further; and why need churches be built, or even maintained, when it is found that the Theatre is at once more commodious and attractive? Is there no danger, here, of confounding light



and darkness—the kingdom of God and his enemy? Can the protest against sin which the Gospel demands be maintained by the preacher who treads the hired boards of the Victoria, and holds forth, under sufferance, to the very multitudes who flock to the same place, the night preceding or following, to be excited by the servants of Satan, and enlisted in the ranks of his followers, if they be not so already? And the same remarks, in our judgment, apply, though with some modification, to those most questionable *entertainments*, given to the unhappy female frequenters of the *pavé*, at midnight, by their, no doubt well-meaning, but, as we believe, most unwise entertainers. In all such experiments, which we cannot but look on as perilous, it would be well to bear in mind the caution suggested by the inspired volume against “doing evil that good may come.”

We must avoid getting into a theological question, on the verge of which we perceive ourselves to be in such remarks; but, if there be any unsuitableness therein, we must transfer the blame to our respected contemporary, who has, in our humble opinion, not now for the first time, been betrayed into an error of judgment in overpassing the bounds of correctness in the psychological retrospect. Were we permitted to pursue our remarks, we should certainly add, that these midnight tea-parties, at which the Hon. and Rev. Baptist Noel, and others of his peculiar school of theology, appeared as the hosts of the unfortunate women whom they entertain at the strange *Soirees* thus prepared for them, seem to us to have neither countenance from Scripture, nor foundation in practical good sense. The Author of our religion did certainly sit down at general entertainments, and His enemies upbraided Him with having done so in the company of “publicans and sinners;” but we have no example in the Gospel of entertainments expressly prepared to receive harlots coming to them in this their avowed character. We would further like to know, if the conduct of the great Exemplar be pleaded as example—and we believe it has—do Mr. Noel and his friends appear among those abandoned women as their fellows in conviviality? We might further ask them, are they aware of the scenes which take place after their “social evil” soirees have been dismissed, and at the very door of their banquetting-house? They tell us of “girls” swooning, repenting, and being restored to virtue and their parents. This may be so; but we would beg our readers to bear in mind that Mr. Noel and some of his friends have been visitors to Ulster during the Revival mania of last year; that he and they witnessed scenes at which others felt unmingled disgust

and disappointment, in that locality, while they appeared quite pleased and satisfied with the same; that, in fact, these gentlemen are among the most earnest and enthusiastic in endeavouring to import Ulster Revivalism into London; and that, therefore, their judgments and tastes are not altogether to be depended on and followed in this and similar matters. We should much prefer the old and long-tried methods of reformation to any such scheme, which, in our judgment, is so calculated to do violence to the feelings and habits of Christian people of all classes, and of sober judgments, if these feelings and judgments are exercised under proper control. Before leaving the subject of these extraordinary—we had almost said spasmodic—methods of Christianizing the masses of profanity in our great cities, on which our contemporary seems disposed to look with so much favour, we would just hint that a very practical view of the question seems to have escaped their promoters. They cost vast sums of money. We have been informed that the hire of these wretched haunts of sin, such as the Victoria in Lambeth, amounts to somewhere about £20 per night, for one such. To this must be added various incidental expenses, which we need not particularize. Supposing *five* such places for “Special Services” to be open on the Lord’s Day alone, in London, that would, in round numbers, give the expense at something like £100 per week. Let any practical man see the amount of capital which this weekly outlay represents, and say whether it would not be better spent on multiplying the ordinary means of grace—churches, ministers, catechists, schools, &c. But there is a *fashion* in these things; and the Baptist Noel mode now prevails, we hope not to possess a long reign.

In taking leave of “The Journal of Psychological Medicine,” while we recognise in it the talent which formerly illustrated its pages, we must again repeat our impression, that a more careful selection of subjects, on the score of appropriateness, as well as a more careful handling of some of the topics selected (instance what we have just commented on), are still required, to enable it to keep pace and rank in the onward march of the professional journalism of our time.

5. The “Journal of Mental Science,” under the able editorship of Dr. J. C. Bucknill, continues to maintain a high place among those devoted to that all-important subject; and the current year of its existence, now the sixth, will certainly not detract from the character which it has already achieved. Its pages are as far removed from “book-making,” toadyism, puff-

ing, and other journalistic excrescences, as can be conceived; while the general tone of its articles is of an eminently practical and valuable sort. It would be vain to attempt an analysis of the contents of the quarterly parts now on our table; and our limits forbid lengthened extracts. We can, therefore, but give a cursory glance at what is supplied to its readers for the present year.

Its opening paper, in the January number, is from the pen of a clergyman, the Rev. W. G. Davies, who is officially connected, as chaplain, with an institution for the treatment of mental disease. Its title is, "Consciousness as a truth-organ considered; or, Contributions to Logical Psychology." This paper, which is followed by another under the same title in the April Number, is a very able and thoughtful exposition of a difficult subject, and in the direction whither all such treatises should proceed. The effort to base all dissertations whose subject-matter is *mind* on observed phenomena, thus assimilating psychology to physical study, and substituting the Baconian method of treatment for the merely speculative and theoretical, is a most laudable one, and one which, in such hands as those of Mr. Davies, will not only reflect credit on its author, but conduce to the interests of true science.

Important practical information, of a statistical as well as historical sort, respecting the present condition of the insane, not only in the United Kingdom, but on the Continent of Europe, will be found also in the pages of this number. We have also some of what may be styled the lighter reading connected with the same subject; as, for example, in a most attractive paper, written with exceeding power of pathos and truth, from the able pen of Dr. Conolly, entitled "the Physiognomy of Insanity."

In the April issue is a biography, apologetically conceived and executed, of the author of "the Raven"—Edgar Allan Poe—by Dr. H. Maudsley. It is difficult to peruse such a document without yielding to the influence of compassionate feelings, in some measure, over the grave of so much wretchedly-abused talent, power of temptation, and perverted feeling, with dire misfortune combined.

Among the subjects naturally and professionally connected with the *materiel* of the "Journal," "Ulster Revivalism" comes in for its due share of attention; and in referring to the view here taken of it, we feel bound to express our entire concurrence. There is here no "playing fast and loose" with a topic which, to all reasonable and duly-informed persons, bears its own character inscribed on every feature.

In an exceedingly valuable article, being a review of the now well-known pamphlet of Archdeacon Stopford (p. 167, in the January number), the writer disposes of this monstrous attempt to engraft mental and bodily disease on religion in a way which is both creditable to himself, and highly calculated to be useful to any who read, or who will condescend to receive due counsel and caution from one who is able to afford it.

Three several original contributions, each earnest, able, and to the purpose, on "Ulster Revivalism," appear in the January, July, and October numbers respectively, from the pen of the Rev. William M'Ilwaine, Incumbent of St. George's Church, Belfast. These papers are deserving of careful and attentive study on the part of all who "love the truth," as well as of those who, having "a zeal without knowledge," aided and abetted in the promotion of an excitement which has eventuated in the most pernicious results. The writer of the contributions now referred to, is a divine of the greatest eminence, experience, and faithfulness, as a Christian Minister, whose daily walk has been such that his "praise is in the Gospel throughout all the churches." From such a source, accordingly, it is a matter of the utmost importance to have a full, true, and faithful account of what has been going on in Ulster for a year and upwards, under the name of "Revivalism;" and, after a calm and dispassionate reading of Mr. M'Ilwaine's papers, all unprejudiced parties must be convinced that the whole, from beginning to end, was "a mockery, a delusion, and a snare." Happily, that mania, for such it undoubtedly was, would now appear to have subsided, and for which every credit is due to Mr. M'Ilwaine, who, though unaided by his brethren, if we except that excellent dignitary of the church, Archdeacon Stopford, and frowned upon by the so-called "religious world," yet fearlessly did his duty under the most trying circumstances, by boldly exposing the monstrous "deeds of darkness" of this so-called "Revival," and thus materially aided in making its abettors cease from their God-dishonouring proceedings in connexion therewith.

We would have desired greatly to reproduce here several important portions of Mr. M'Ilwaine's able, argumentative, and well-timed papers; but our space forbids us to do more, on the present occasion, than to give the annexed extracts from his concluding contribution, which appears in the last issue of the "Journal," now before us, and which will afford some idea of the reverend author's spirited manner and style of dealing with the confessedly delicate and painful task his solemn and bounden duty, as a minister of religion, and in its defence, had compelled him undertake:—



“I would desire to guard against a misunderstanding, or a perversion, of what I have felt bound to put on record here respecting the late current delusion. I am far, very far, from desiring to assert that none have been savingly influenced, and so converted, in a scriptural sense, even during this reign of error. Such cases, however, are best known by their Divine Author. His work never ceases among the children of men, and is carried on at all times, in His own way, and by His own appointed means. What I do mean to assert is, that most gross, carnal, and delusive notions, speaking of them in a religious sense, have been abroad, during the time referred to, under the head of conversion. I would further state, that the entire class of physical phenomena, with all their accompaniments, however wondered at and approved by some, and accepted by others, as facts providentially permitted, and intended by God to conduce to conversion, are utterly undeserving of trust or acceptance, as tending to beneficial results. And even as regards those cases of alleged conversion which may not come directly under this head, but which have arisen out of the excitement, and during the period of extraordinary religious movement in question, I feel strongly disposed to view them as exceptional, not to be relied on for genuineness, much less to be paraded as miraculous, but to be dealt with by all those who are concerned in their treatment with extreme caution.”

“I have been compelled to lay the charge of ignorance, both in regard to the facts of scripture and the doctrines lawfully deducible from these facts, at the door of certain individuals. But an attentive observer will most easily have discovered ignorance of another description in the same quarter. I allude to that lamentable want of information and reflection which has discovered itself in the *confusion between what was purely natural, physical*, and to be accounted for on strictly natural and rational principles, with what *was set down as spiritual, divine, and altogether miraculous*. I designedly avoid exhibiting examples of these mistakes, and chiefly because such examples would have to be selected, not from the lower, untaught, and unthinking classes, where one might naturally have been led to look for such hallucination, but I regret to say, as truth compels me, from among the educated, professedly enlightened, and often the devout, yet too credulous and imperfectly informed on these matters. By many such, the very nature and use of a miracle, and of miraculous agency, would seem never to have been seriously and deliberately either known or considered. The entire history of fanaticism, enthusiasm, and religious delusion would appear to have been to them a complete *tabula rasa*; while the connected fields of knowledge, such as that of Psychology, the relations of spirit and matter, and even the *Ars ratiocinandi* itself, would seem to have been totally unexplored, or for the time forgotten. And, most assuredly, such subjects and such inquiries are most necessary for the religious teacher, the ‘scribe well-instructed,’ who has to wend his way and fight his battles through the hazardous roads and spi-

ritual conflicts of this nineteenth century. I am convinced that these and kindred topics are far from occupying their legitimate and indeed necessary place in the *curriculum* of instruction which even our Universities offer to the candidate for the awfully responsible office of Christian teacher. Had these subjects been duly learnt and digested by those who either necessarily or voluntarily were led into contact with Ulster Revivalism, those who stood aloof from its extravagancies, and accompanying evil and delusion, would not now have to lament over the mistakes of so many brethren, even from among that class which has been usually denominated the Evangelical, partially, and it is to be hoped but partially, led away from the steadfastness and sobriety of true religious principle and practice, under the deceitful glare of an earth-born meteor, as wild and as dangerous as any that ever dazzled and deluded the followers of Him whose name is THE TRUTH."

In the April Number we have "a descriptive notice" of the Sussex Lunatic Asylum, opened in 1859, for about 400 inmates, from the pen of Dr. Lockhart Robertson, its able physician-superintendent,—a paper not without much interest, and one which is drawn up with great attention as to detail. The salary attached to the office of the superintending physician, viz., £450 per annum, though comparatively liberal, yet is not, by any means, in proportion to that of the chaplain, who is paid £200 per annum. Lord Shaftesbury, the chairman of the English Commissioners in Lunacy, in his important evidence before the Select Parliamentary Committee on Lunatic Asylums, stated that the salary of a medical superintendent of a public asylum should be "from £500 to £600 a year, with house and allowances," and that the number of patients in his charge should not exceed 300.

A very readable and valuable article, entitled "Psychical Diseases of early life," by Mr. J. Crichton Browne, a son of Dr. Browne, the distinguished Scotch Commissioner in Lunacy, is also of the contents of the Journal for April, together with an equally important one by Mr. Gaskell, Commissioner in Lunacy, "On the want of better provision for the labouring and middle classes when attacked or threatened with Insanity." Anything of this practical nature from the pen of Mr. Gaskell, a gentleman of such great and well-appreciated authority and high official position in all matters touching the interests of the insane, is deserving of the best consideration; and, no doubt, every attention will be given to this excellently-conceived paper of his, with the general scope of which we ourselves most cordially concur. We wish we could afford space to transfer several portions of it into these pages, but we have only room for the annexed short extract:—

"To obtain the object now advocated, it seems desirable to extend legal sanction to a class of houses into which patients should be allowed to place themselves voluntarily, or be admitted on less complicated and stringent documents; and further, that in them a limited control only should be exercised over the inmates, extending possibly to certain rules of the house, a required presence at the family table, return home at an early hour, and strict prevention of absence during the night time.

"Such places offering an agreeable change of scene, quiet, and retirement, as well as the benefit of good advice, would afford a means of treatment much to be desired for incipient and transient cases. For those also convalescent from the more severe forms of the malady, they would prove of great benefit as probationary houses, intermediate between the asylum and home. There is good reason to believe that detention under observation for a limited period, in houses so constituted, would have the effect of preventing, in a great measure, the grave accidents which sometimes occur after the abrupt removal of a patient from the care and supervision under which he has been placed. A short residence in them would bring into operation and confirm the power of self-control, and thus, by promoting complete recovery, diminish the risk of relapse to which patients are now often subject from a too sudden return to their ordinary mode of life."

The contents of the July number of the "Journal," are: "A case of Homicidal Mania without disorder of the intellect," by Dr. L. Robertson, Sussex Asylum. This is a very remarkable case of impulsive homicidal mania, in which several murderous assaults, and all of the most treacherous and assassin-like kind, were made by the patient on officials, whilst an inmate both of the Sussex and the Kent asylums, respectively. The public generally have little conception of the imminent perils and dangers to which those in charge of the insane are constantly subject. The case here, so graphically related, "a tale unfolds" on that head, and will well repay a perusal. "Histoire Littéraire des Fous; par Octave Delepiere;" a review by Dr. Maudsley, and executed with ability and judgment. "On General Paralysis," by Dr. H. Tuke. We have on former occasions noticed with every commendation Dr. Tuke's practical papers in our contemporary, whose contribution now is of the same order of excellence, and on a subject with which he is evidently quite familiar, and must have studied with great carefulness in its several remarkable, and frequently obscure, phases. "On Physical Affections in connexion with Religion, as illustrated by 'Ulster Revivalism,'" by the Rev. William M'Ilwaine, A.M. We have already made some special remarks on this subject, so ably handled by the reverend author.

"On Potentiality and Actuality in Man," by Dr. J. S. Bushnan. This is a short paper, the brevity of which, however, does not detract from its merits, whatever it may enhance them. "Notes on Nursing," by Miss Nightingale; a review written by Dr. Bucknill, and in the highest terms of praise, as has been the case with all that this remarkable lady has said, done, and written, since she came on the public stage. "Annual Reports of Lunatic Asylums," a review. "Criminal Lunatics," by Dr. W. C. Hood, a review. "Observations on the Offices of Resident and Visiting Physicians of District Lunatic Asylums in Ireland," by Dr. Joseph Lalor: a review, entirely commendatory of Dr. Lalor's *brochure*, and in the course of which the learned reviewer says:—

"By all means let the visiting physicians enjoy 'their vested pecuniary interests,' as Dr. Lalor calls them, whether in the shape of salary or pension; but let them not stand in the way of officers so essential to the safety and general welfare of the inmates of asylums as the subordinate medical residents undoubtedly are—officers, indeed, upon whom, in this country and in Scotland, it is impossible to bestow too high a meed of praise. They are, in fact, to the resident physicians what his lieutenants are to a naval captain. A visiting port-admiral may be all very well in his way, but we cannot do without the lieutenants."

"Aspirations from the Inner, the Spiritual Life," by Doctor Henry M'Cormack. This appears to be a very original production, and from the prolific pen of a member of the profession of great provincial eminence. The reviewer concludes a laudatory notice of the work with the following pithy sentence:—

"This book is what is called a good book, without being insipid. Full of religious thought, it has not a tinge of cant or bigotry. It is also learned without pedantry, and is evidently the long accumulating record of the opinions and reflections of a highly cultivated mind."

The October number, the last of the series for the current year, commences with the proceedings of the annual meeting of the Association, which took place in London in the month of July, which occupies a large portion of its pages. The address of the President is eloquent and enlightened, as might be expected from Dr. Bucknill, whose social and professional position and literary fame amongst his *confrères* in particular, and the profession generally, are deservedly of the highest order. The meeting on this occasion was exceedingly well and influentially attended, and the proceedings transacted at it were



unusually important and interesting, and all conducted in a spirit of the greatest harmony, and a disposition to promote the interests of the insane to the utmost; to effect which, this Association can, no doubt, exercise a most potent influence, and be a very powerful engine in accomplishing a large amount of good to both the sane and the insane.

Not least in importance of the questions which came under the special consideration of the meeting was that with reference to the vexed point of "Visiting Physicians to the Hospitals for the Insane" in Ireland, which ultimated in the adoption of a unanimous resolution, proposed by Dr. Conolly—a name so highly esteemed and eminent in the profession—to the effect, "that the Association considered it desirable that all the responsibility of the management of asylums, and the treatment of patients, should be placed upon the resident medical officers of asylums, and that physicians not resident in asylums should be restricted to the discharge of the duties appropriate to consulting physicians." We need not say that this has always been the view we have taken and advocated on this matter; and we are rejoiced to find that the "collective wisdom" of psychologists, as represented by this long-established and rapidly-increasing Association, has now so fully endorsed our opinion in regard thereto. Several papers of great interest were read at this meeting, which are published in this number, and well merit being carefully studied by all members of the profession.

Our own metropolis is to be the *locale* of the Association's annual meeting next year, under the Presidency of Dr. Lalor, of the Richmond District Hospital for the Insane, when we augur there will be as successful a re-union as any that has yet occurred with this most respectable and important professional body, and upon occasion of which we hope and feel assured their brethren generally will receive them with nothing short of a real *cead mille failte*.

"The Religious Aspect of Ulster Revivalism" (concluded), by the Rev. William M'Ilwaine, is the next article, one which we have already referred to. We have also "Medical Certificates of Insanity," by Dr. Bucknill; "General Paralysis," by Dr. H. Tuke, in continuation from the July number, and which the author discusses with much acumen, as before. "Observations on the size and construction of Lunatic Asylums," by Dr. Lalor. We can by no means endorse the novelties and heterodox views propounded in this paper, which are altogether contrary to experience, and at variance with the opinion of the best authorities, in respect of the points brought forward by

Dr. Lalor. Among which are large dormitories, which, in our view of the matter, are amongst the abominations of our public institutions for the insane, and the sooner exploded the better. No dormitory should contain more than six or eight, as a maximum. Dr. Lalor sees nothing objectionable in an unwieldy and unmanageable establishment like that universally-denounced one at Colney Hatch, and states that "the General Superintendency" of an asylum with 2000 inmates would be "about as easy for one head" as an establishment "for 250, with its many arbitrary and complicated subdivisions." Now, Dr. Lalor will permit us to ask him, if it be desirable, as all will agree, that "the influence of the chief resident officer should be brought to bear *constantly* on each case *individually*, so as that he might daily give to *each of the patients* such personal advice and instruction as seemed best calculated to subvert existing delusions or immoral propensities, and to instil sounder notions"? (p. 105) how could "one head," by any possibility, accomplish this necessary task? This "one head" would require to be something more even than Sir Boyle Roche's celebrated bird. Say that the "one head" gave but half a minute to each of his 2000 patients, here, at one fell swoop, would fifteen hours out of the twenty-four be swallowed up, being three more for "work" than the highest authority impliedly states should be so employed:—"Are there not twelve hours in the day?"

With regard to single sleeping-rooms, or "cells," as we must say, they are rather infelicitously designated in the paper under consideration, Dr. Lalor states:—"I believe that the opinion is gaining ground more and more every day that single cells are not required by any means in large proportion; and the day may not be distant when it may be considered that they can be advantageously dispensed with altogether"! Yes, in the Millennial age, "when the leopard shall lie down with the kid," &c., certainly not a day sooner. It is, we believe, a pretty well understood matter of detail that one-third, at least, of the accommodation should be in single apartments; and the experience of most Superintendents, we will venture to say, is, that, whatever more this proportion should be, it should not be less; inasmuch as it is a constant source of annoyance in public asylums, and felt as a serious grievance amongst the better class of patients in them, so many being obliged to sleep in the associated dormitories. Dr. Lalor's approval of dining-halls so far meets with our own views, that we would, and have, strongly urged their general adoption, and this, too, for both sexes together, but not in larger proportion

than might be selected from an aggregate population, say of 300, being Lord Shaftesbury's maximum for an asylum number. A prandial gathering from 2000 would, doubtless, be nothing short of a Babel, even supposing that they were all of the sane portion of the community.

The papers that remain to be stated, as contained in this number of the *Journal*, are:—A Review on the "Fourteenth Report of the Commissioners in Lunacy;" "A Letter to the Rt. Hon. H. Walpole, M. P., &c., on Chancery Lunatics," by Dr. Bucknill; and, lastly, the "Report from the Select Committee on Lunatics to the House of Commons," a notice of which will be found further on in this annual review of our own.

6. The letter of Dr. Nugent, "to Extend the Benefits of Swift's Hospital," takes up a subject of the deepest moment and interest; and we are exceedingly glad to see that it has fallen into such competent hands, as the manner in which it has been discussed by him so fully testifies. Swift's Hospital, as that institution is popularly called,—its more correct title being, St. Patrick's Hospital,—is placed, as to locality, in a similarly unfortunate way, as the Richmond District Hospital for the Insane; both being in situations, of all others, entirely unfitted and unsuited for their purposes as institutions for the treatment of insanity; it being plainly evident that, for such peculiarly-circumstanced hospitals, the busy world immediately outside their walls, and that busy world composed of the most abject nearly of those living in the outskirts of the metropolis, north and south, as happens to be the case with each, must be, and is, a great drawback at the very threshold to their all-important objects. Beauty of situation, and a widely-extended prospect, are primary adjuncts, in matters having to do with the "mind diseased." First impressions, too, have a large share for good, or for evil, in the subsequent treatment of a patient labouring under insanity. And the impression that would be made, say, on a gloomy day, in the gloomy month of November, on a patient coming, perhaps, from a picturesque part of the country, and passing through the dingy and begriming streets in immediate propinquity with both Swift's and the Richmond, may well be imagined to be of the most depressing and unhappy kind. Having made these few preliminary remarks, it remains for us only to state, as shortly as possible, the purport of this well-timed letter of Dr. Nugent, which has been addressed to the Hon. and Very Rev. Dean Pakenham, a leading governor of Swift's Hospital, and one who, we believe, has always taken



a very lively and active part in its management. Dr. Nugent shows, in the first place, what the deficiencies of Swift's are, and how much behind the age it—a richly-endowed institution—is, in the means of treating its inmates with effect. Some of those deficiencies are:—1st. Inability for a proper system of classification. 2nd. Insufficiency of grounds for exercise and employment, respectively; its condition in that most essential requisite being transparently bad, namely, but five or six acres for 150 patients!! Whereas, the quantity should be, one acre for four, at least, thus making the defect in this item very great, and serious. In our notice, preceding this, of the Report of the English Commissioners in Lunacy, it will be seen that, in a pauper asylum even, so much as 260 acres of ground have been allocated for 500 patients; a very different proportion to that afforded to the “cabin'd, cribbed, confined” inmates of Swift's. 3rd. “The gloomy character of the interior—the very situation of the building precludes the hope of its being obviated. If new windows be opened out, or the old ones enlarged, the prospect, save from some few points of view, will simply extend to the adjoining dead walls, or neighbouring buildings.” This is true to the letter, and just as stated by ourselves, before we had read it here. 4th. The sewerage is very bad; the water-closets ill-constructed, and occasionally offensive; deficiency as to baths, and apartments for refractory, &c., patients. 5th. The cures are below the average of any similar institution in this country. All these shortcomings on the part of Swift's are, individually and collectively, of a really very grave character, and requiring to be remedied, and that, too, with all convenient despatch. Now, the remedy suggested by Dr. Nugent, though completely organic in its character, is the only one that, under present circumstances, could be adopted to get rid of all the evils of the existing hospital; that remedy being “to abandon the existing premises, and to erect, on a salubrious, cheerful site, at a convenient distance from the city (say, not more than three or four miles), a regular institution, replete with modern improvements, for the effective treatment of mental diseases, but more particularly in their earlier or acute stages—thus to connect the funds, left by Dean Swift, to the securing a greater benefit to society at large than could be attained, were they, as is now the case, in great measure, simply devoted to the maintenance of incurables.” This is well and effectively put by Dr. Nugent, who subsequently enters into the monetary part of the question, proving to a demonstration the feasibility of his proposition being accomplished on the part of the Governors, and who, we hope, will not throw a wet



blanket on it, or free themselves from their responsibility by pooh-pooing a matter which is of the utmost moment in all its bearings, and certainly should be taken up by them in their corporate capacity, and seriously discussed, in order to steps being taken as immediately as possible towards a consummation so devoutly to be wished for, as an entirely new and improved Swift's Hospital, which would shed increased lustre on the memory of one who did so much to meliorate for all time, by his noble endowment, the unhappy condition of those afflicted with insanity. Before leaving this excellent letter of Dr. Nugent, we would advise the Governors of Swift's Hospital to read, in the first and twelfth articles of this review, the fate of St. Luke's Hospital, of London; an institution like Swift's in many respects, richly endowed, and badly situated; its Governors, too, advised by competent and experienced parties to give up the concern altogether, and build anew elsewhere—advice, however, which they have spurned, perhaps laughed at, and ridiculed as “building castles in the air,” and so forth—but mark the consequence—their Hospital is gradually sinking into extinction, patients being sent elsewhere for due treatment which they could not obtain in St. Luke's.

7. The Ninth Annual Report of the Committee of Visitors of the County (Middlesex) Lunatic Asylum, at Colney Hatch, brings the operations of that “Mammoth” institution down to the termination of the year 1859. The number of inmates it had then within its walls was 1,813, 692 of whom were males, and 1,121 females. The disproportion here of the sexes is very remarkable, but not taken any notice of, or attempted to be accounted for, in the Report. The total number of recoveries during the year was 168, 105 being males, and only 63 females. Here again is a singular difference, the proportion of cures amongst the males being so comparatively large, and that of the females so greatly the reverse. The total deaths were 135, 75 of the number being males, and 60 females. This latter result of the year was still more extraordinary than either of the others,—the mortality amongst the males, it will be observed, being so very large as compared with that of the females, which, on the other hand, was surprisingly small, scarcely 6 per cent., whilst that of the males was about 10 per cent. The causes of death in the males were:—Exhaustion and general paralysis, 36; epilepsy, 10; age and decay, 11; phthisis pulmonalis, 9; maniacal exhaustion, 5; apoplexy, 2; perforating ulcer of stomach, with general paralysis, 1; and pneumonia, associated with epilepsy, 1.

The causes amongst the females were:—Phthisis pulmonalis, 11; epilepsy, and general paralysis, each 10; natural decay, 4; epilepsy complicated with phthisis, 3; congestion of lungs, epilepsy with erysipelas, gastric fever, maniacal exhaustion, ditto with bronchitis, each 2; apoplexy, bronchitis, cancer of uterus, congestion of brain, epilepsy with peritonitis, hydrothorax, dysentery, peritonitis, gangrene of lung, pneumonia, umbilical hernia, and typhomania, each 1. No case of suicide or other untoward event occurred in the institution amongst the inmates during the year, which speaks for itself as to the great vigilance and constant attention that must have been called into requisition on the part of the officials generally, though, had anything of the kind taken place, it would not have followed that either one or the other was neglected. Three of the females attempted suicide unsuccessfully, by cutting the throat, strangulation, and drowning (in a bath), respectively.

We observed, in preparing our notice of the Commissioners' Report, as embraced in this Review, that no mention whatever was made in it of the Colney Hatch Asylum; neither of Hanwell nor of Bethlehem, which struck us as both remarkable and unaccountable,—all three, it might naturally be supposed, being special objects of their visitation, and observation accordingly, in their official retrospect of the year. This lache, however, so far as Colney Hatch is in question, is made up for in the "Report of the Committee of Visitors," now before us, in which we have a lengthened official inspection of the Asylum recorded as made by four of the Commissioners, who certainly have been far from sparing in their animadversion upon the management of the Asylum in several important respects; but, unfortunately, our limited space will not permit us to give their remarks in any but the most condensed way, as follows:—The ventilation is objected to as imperfect in some of the dormitories, the new single rooms, padded rooms, laundry, dining-hall, and passages. The asphalté pavement is recommended to be substituted by a wooden flooring, and the gas-burners and pipes to be made less facile for suicide. The washing accommodation is pronounced to be very insufficient. The furniture, as far as respects the seats and tables for the new wards, is stated to be of "heavy construction." The clothing is condemned for want of neatness; and, what must assuredly be of rather a burlesque and grotesque character, but all the more appropriate, perhaps, in such an institution, the worthy Visitors think, the boy patients, who are pretty considerable in number, are forced to wear the clothes and stockings of men! The patients,

many of them, were unoccupied, listless, and not a few sitting or crouching on the ground. The introduction of cheap publications, games, prints, and objects of interest, in all the galleries, is suggested, as well as that the ground occupied in crops, and these crops reaped by hired labourers, should be converted into gardens, and worked by the patients. Some of the airing courts are condemned for their roughness; and "the north airing-ground," in particular, is stated to consist altogether of very steep and large mounds of rubbish, unfit for any purpose whatever, together with being not free from danger to the patients. The gardens of the institution are, it appears, not accessible even to the medical officers of the Asylum, which is a most extraordinary and inexplicable restriction, and palpably bad and unjustifiable. The dietary and system of cooking is much censured. The inspecting Commissioners express their satisfaction that the salaries of the principal medical officers had been raised to £500 per annum, their former salaries having been "very small," as was the case, most undeniably, for the onerous duties required of, and performed by them; and, even at present, are only an approximation to what they should be, the absolute slavery of their office being such that a remuneration of £1000 a year would not be an over-liberal allowance. And, lastly, the report of the four Commissioners observes:—

"We satisfied ourselves that their power (that of the principal medical officers) throughout the Asylum is not such as is confided to medical superintendents in general. We think that it should be increased, and, especially, that they should be allowed a discretion to expend, from time to time, certain limited sums for the benefit of the patients, as is the case in many other Asylums."

This is excellent advice to the Visitors, but which, we apprehend, they are not likely to act upon, as, from their angry and captious reply to this, no doubt well-merited, castigation on the part of the Commissioners, they would appear determined to be self-willed, and to act on the principle of all unreasoning and unreasonable autocrats—*sic volo, sic jubeo*. Their "steward" would appear to be their right-hand man, for we perceive that their reply to the Commissioners is largely interlarded with a report made to them by him in exculpation of the charges contained in the Commissioners' heavy bill of indictment; but not a line or word is given of the Reports of the Medical Superintendents, which, we take for granted, they also were called upon to furnish, as well as "their steward's;" the Visitors stating that they had "referred the entry made by the Commissioners, in the Visitors' Book, to those officers to

whose departments their observations especially refer." But, throughout, those "clothed with a little brief authority" in that insane colony, Colney Hatch, have manifested a disposition of puerility of mind towards the chief officers, the Medical Superintendents,—a line of policy but ill calculated to further the interests of that overgrown establishment, wherein everything should have been done to uphold them; and the "steward," instead of being exalted as he has been, and paid a salary nearly as large in amount as that of the superior officials, £450 per annum, should, with the other secondary functionaries, have been made to look up to them as the heads of the establishment, vested with "paramount authority" for the benefit of all within its walls. This is the real secret of similar institutions working, as they do, satisfactorily in every respect,—neither Visitors nor "their stewards" overstepping their own proper duties, or attempting to lord it over those whose high and important functions should be their passport to every respect and consideration. There is one redeeming point, however, in this "Report of the Committee of Visitors," which is worthy of especial note and commendation, namely, that its contents, though so largely filled with the lucubrations of the Visitors' "steward," are not rendered more supremely ridiculous by the bombast and *persiflage* of a matron's, as is the case in the annual Reports of the "Committee of Visitors" elsewhere.

8. The twenty-second Annual Report of the Suffolk County Asylum, by Dr. Kirkman, its eminent Physician-superintendent, is a valuable and well-written document, containing very enlarged views, and those of a more than ordinarily suggestive character, which might only be expected, emanating as they do from a gentleman who, it appears, has reached "the standing of the oldest medical superintendent in England in years, and the longest in asylum management." In this Report we have a concise and interesting account of the rise and progress of the Suffolk institution, which has now been in operation thirty-three years, and has ever maintained the highest position amongst kindred establishments. Dr. Kirkman has some most judicious remarks in regard to the communication of religious truths to the insane patient, and shows incontestably that the periods at which such may be ventured upon are frequently "sudden, and perhaps unexpected, periods—only, probably, of a few minutes' lucidity—that the word can be spoken in season. Such periods, and such a season, can only be known to the Christian physician in his daily intercourse with his afflicted charge."



The patients are stated to have been healthy during the year, and to have "enjoyed, as usual, extended liberty, including a very pleasurable visit of many of the females to the seaside. In addition to their usual Christmas festivities, a lecture on elemental philosophy and chemistry, accompanied by instructive experiments, was given to them by the assistant medical officer, Dr. Wm. P. Kirkman." This is a humanizing system of management, and cannot be too highly extolled. The number of patients in the Asylum at the end of the year amounted to 312 (131 males, and 181 females). The discharges in cured were 56, relieved 3; and the deaths were 35, the causes of which were:—Exhaustion, maniacal, &c., 12; phthisis, 7; paralysis, and general ditto, 4; cardiac disease, 4; epilepsy, 3; apoplexy, 21; bronchitis, chorea, and peritonitis, each 1. Several of the death casualties of the year, it appears, occurred with patients who were admitted in a nearly dying state—a condition, in which the insane are too often sent to an asylum, and as if only to add to its mortality.

The dietary of the Suffolk Asylum may be given as follows:—Breakfast—6 oz. of bread, with gruel made of groats, 10 lbs. to 8 gallons of milk. Dinner:—Sunday—bread, 8 oz.; cheese,  $1\frac{1}{2}$  oz.; beer, 3 naggins. Monday and Thursday:—Suet dumplings and rice puddings, 1 lb. each, with beer, 3 naggins. Tuesday and Friday:—Meat, 6 oz.; bread, 4 oz.; and beer. Wednesday and Saturday:—Soup, from Tuesday, with 2 oz. additional of meat; bread, 7 oz. Supper:—Sunday, Tuesday, and Friday—bread, 8 oz.; butter,  $\frac{3}{4}$  oz.; tea, 3 naggins. Monday, Wednesday, Thursday, and Saturday—bread, 8 oz.; cheese,  $1\frac{1}{2}$  oz.; beer, 3 naggins.

On the whole, we are of opinion that the above scale of dietary is not as generous as we would have expected in an English asylum, especially as regards butcher's meat; and but 6 oz. of bread being allowed for breakfast, with the "gruel," is scant enough fare as a foundation for the day. Vegetables are only served on two days in the week, Tuesday and Friday, which is scarcely sufficient.

The year's expenditure amounted to £6,367 17s. 3d., which was small, as compared with English asylums generally. In the year's outlay we are glad to perceive there is no mention of tobacco, that poison of mind and body, which is still countenanced, we regret to have to say, in so many asylums, though otherwise so well and creditably conducted.

## 9. Dr. Skae's annual Report of the Royal Edinburgh Asy-

lum, for the year 1859, informs us that the number of patients under treatment that year was 858 (460 males, 398 females), of whom were discharged 125—viz., cured, 68 (28 males, 40 females); and uncured, 57 (34 males, and 23 females); and that the deaths amounted to 60 (43 males, 17 females); which left remaining under treatment at the end of the year, 673 (355 males, 318 females). The causes of death were:—Phthisis, 20 (11 males, 9 females); general paralysis, 12 (males); disease of kidneys, 5 (3 males, 2 females); disease of brain, 3 (females); dysentery, 3 (males); epilepsy, 2 (1 male, 1 female); cerebral effusion, 2 (males); maniacal exhaustion, 2 (males); pneumonia, 2 (males); apoplexy, 1 (male); hemiplegia, 1 (female); empyema, 1 (male); gangrene of lung, 1 (male); morbus cordis, 1 (male); pericarditis, 1 (female); gastric ulceration, 1 (male); cancer of stomach, 1 (male); disease of liver, 1 (male). A very carefully drawn up statement is given in an appendix of the pathological appearances observed in the brain, in the several post-mortem examinations, viz., 36, which were made during the year; and from which we learn that the grey matter was pale in 1 case of acute mania, 1 of dementia, and 5 of general paralysis; violaceous in tint in 1 case of hypochondriasis, and 1 of general paralysis; softened in 2 cases of dementia, and 7 of general paralysis; and atrophied in 2 cases of dementia. Dr. Skae states, amongst the causes of the admissions of the year, six arose from religious excitement; three of which were attributed to the “Revivals”. “In one, a female,” he goes on to say, “revival meetings had been regularly attended for a week. Another female had attended only one lecture by a well-known revivalist preacher. The third case was a male, who had attended no meetings, but had pored over the newspaper accounts of the ‘Revivals,’ until he ultimately experienced some violent paroxysms, which, he said, were ‘the coming of God on him.’ He became convulsed, the convulsions increased in severity, and his whole body was distorted. Violent excitement, and incessant restlessness, continued up to the time of his death, which occurred in nine days after his first seizure, death taking place during a convulsive attack.”

The employment and work executed by the inmates of this well and humanely conducted institution, are varied and considerable. But it is not “all work and no play;” for we find that the recreations and amusements are quite in keeping with the spirit of the age in these important respects. Besides the stated recreations, there are regular intellectual reunions

amongst the patients; and lately there has been instituted a weekly club, where a paper is read by one of the members, which affords a source of much enjoyment and improvement to all capable of participating therein.

The average daily number of patients in the Edinburgh Asylum is reported as 666; and, for their due care and superintendence, there is one resident physician, at a salary of £497 10s. (this odd sum is curious, why not make it £500?) with three assistant-physicians, at salaries (wages we should rather say) respectively, of £65, £42, and £21 17s. 3d. (fractional parts again). This only moderate staff bears a remarkable contrast to that of Colney Hatch, which latter institution, with nearly treble the number of inmates, has but five medical officers altogether,—two chiefs, and three assistants. But the wretchedly small remuneration given to the assistant medical gentlemen of the Edinburgh Asylum (each, be it observed, a graduate in medicine), is most discreditable to the managers of that institution, who ought to remember that “the labourer is worthy of his hire.” We referred to this last year, when noticing the Report of the Scotch Commissioners in Lunacy, who animadverted strongly upon such inadequate payment on the part of an establishment whose “revenue was in a very satisfactory condition.” The only result, to the present time, of this well-merited rebuke of the Commissioners, is, that the splendid addition of seventeen shillings and threepence has been made to the scant “wages” of the junior assistant-physician, which hitherto stood at the surprisingly large figure of twenty-one pounds per annum!

10. We are not often favoured with the Reports of the Glasgow Royal Asylum, which, however, “maketh no matter to us,” as regards it or such institutions generally, further than that we conceive medical superintendents should feel it their bounden duty towards the Profession to afford the results of their charge, by transmitting copies of their reports to each of the professional journals taking an interest in their contents, and which it is so desirable should be ventilated freely, and not kept as sealed books, as is too much the case, from the sparse manner these printed reports would appear to be distributed for the benefit of the general body of the Medical Profession. The state of this large and well-circumstanced establishment, at the close of the year 1859, was as follows:—

	M.	F.	T.
Remaining on Dec. 31, 1858, . . . . .	249	255	504
Admitted since, . . . . .	115	89	204
Total, . . . . .	364	344	708
Discharged, cured, . . . . .	41	41	82
Do., relieved, . . . . .	33	40	73
Do., not improved, . . . . .	3	1	4
Died, . . . . .	21	28	49
Total, . . . . .	98	110	208
Remaining, Dec. 31, 1859, . . . . .	266	234	500
Total treated, . . . . .	364	344	708
Average daily number, . . . . .	266·18	247	513·18

The cures effected during the year amounted, it is stated in the Report of the Directors, to "between 40 and 50 per cent.," which we cannot find borne out by the above numbers, 82 being given as the number "cured," which, divided amongst the average number of patients resident throughout the year—the usual method of computation, and the fairest in such matters—would fall very far short of "between 40 and 50 per cent."—in fact, be only 16 per cent.

Dr. Mackintosh, the eminent and experienced Physician-superintendent, makes some very sensible remarks in his judiciously drawn-up report, respecting the dismissal of certain classes of—suicidal, homicidal, &c.—patients, observing:—"What probation should they undergo before liberty be granted to them? For although they may have appeared to be completely recovered, yet it has been afterwards discovered that immediately, if not before, they passed the gate, their malady had returned; and that it had, probably, been caused by the very little excitement of preparing to leave the Asylum; thus showing, that although they might have appeared quite well, and, as it were, deceived every one, including themselves, as to their real state, yet that they were utterly unfit to bear, far less able to contend against, the annoyances and irritations of the external world."

Of the causes of death during the year, the largest number arose from disease of brain, 12 (8 males, 4 females); 10 (3 males, 7 females), from exhaustion (maniacal?); 7 (5 males, 2 females), from epilepsy; 5 (4 males, 1 female), from apoplexy; 5 (females), from phthisis; 3 (1 male, 2 females), general para-



lysis; 2 (males), disease of heart; 1 (female), dysentery; 1 (female), enteritis; 1 (female), disease of stomach; and 1 each (males), of peritonitis and phrenitis.

A very full and interesting account is given of the most remarkable, persistent, and varied attempts at suicide on the part of one of the deceased males, who ultimately died of apoplexy, but who required, till death occurred, the unremitting attendance of two or three attendants to prevent his suicidal propensity being effected. His principal delusion—one so common amongst the insane—was, that he had committed the “unpardonable sin;” and that the sooner he destroyed himself the better. Dr. Mackintosh goes on to say of this case:—“Nothing could exceed the pertinacity of his efforts, by every possible means, to destroy himself. He attempted to suffocate himself by stuffing things into his mouth, by holding his breath, and grasping his throat; by burning; by dashing his head against the wall; by starvation; and, in short, by all and every means he could think of. Finding that he could not thus attain his object, he next attacked his fellow-patients, with the view of provoking them to kill him.”

Of the apparent or supposed causes of insanity of the cases admitted during the year, “intemperance and hereditary disposition” produced the greatest number, each being 27; “previous insanity, 20; religious excitement, 10;” &c., &c. Dr. Mackintosh has the following judicious observations touching “previous insanity” as an immediately exciting cause:—“The susceptibility to mental disease induced by previous attacks is universally acknowledged. A person may suffer from a severe attack of mental aberration, recover, and remain in the full possession of his faculties during the subsequent period of his life. Such cases are met with, and have occurred in our own experience. After one attack, however, there is always a tendency to a recurrence of the malady, and even in cases where no hereditary taint can be traced. The brain once affected has received a shock, and has become susceptible to impressions unfavourable to its healthy exercise, and is apt to succumb under the operations of causes which, in other circumstances, it would have steadfastly resisted.”

The expenditure during the year was £18,819 2s. 6d., the largest items being—butcher’s meat, £3,214 3s. 9d.; wages, £2,161 11s. 8d.; salaries, £942 7s. 0d.; wine, spirits, and malt liquors, £903 2s. 5d.; groceries, £862 0s. 11d. No mention, directly at least, is made of tobacco, in any shape, in the outlay of the year; so that we hope Dr. Mackintosh is of the number of medical superintendents who discountenance the use of this hate-

ful weed. We must observe, in the language of praise, that the Assistant-physicians of this Institution are remunerated in a manner something befitting their professional position, each being paid a salary of £100 per annum, which is an example worthy to be followed the sister institution of Edinburgh. Another most commendable feature in the management of the Glasgow Asylum is, that the Physician-superintendent takes his place at the meetings of the Board of Governors, not as a matter of sufferance merely, but as a matter of right, by the standing rules of the Asylum. This is just as it should be, and, instead of being the exception, ought unquestionably to be the rule in every public asylum,—it only being a matter of justice, and for the due welfare of the establishment, that its responsible and chief officer should be present to advise, but not, of course, to vote with, the Board, on behalf of the interests of his patients. Boards would lose nothing in dignity by this course, whatever, on the contrary, they would add thereto.

In now closing our necessarily brief analysis of the Glasgow Asylum, we feel bound to say that its management reflects the greatest credit on Dr. Mackintosh, its excellent and experienced head.

11. The first paragraph in the Report of the Worcester Asylum, for the year 1858, that for 1859 not having been yet received, is to the following effect:—"Your Committee continue to feel the same confidence in Dr. Sherlock, as they have always had, as well as their admiration of the ability, attention, and zeal, which he displays in the management of the business of the Asylum, and in the care and treatment of the patients." This prominent testimony to the professional and official conduct of Dr. Sherlock is highly creditable, and speaks well for the good feeling which must exist amongst all parties intrusted with the direction of an institution in which it is of so much moment to the best interests of its inmates, that perfect harmony, gentleman-like bearing, and the fullest confidence should subsist on all sides, otherwise disastrous effects will sooner or later be manifested, and the unhappy patients themselves feel the irreparable consequences thereof.

From Dr. Sherlock's own portion of the Report we make the following extract, as interesting and practical:—"The amount of personal liberty which is now generally accorded to most patients in asylums renders their occasional escape not unfrequent, and much greater injury to the majority would result from establishing a strict code of regulations as would render such a contingency impossible." And yet Dr. Sherlock is sub-

ject, at any time, to be mulcted in the penalty of twenty pounds for the escape of one of his patients; for such is the spirit and letter of the law for the regulation of the care and treatment of lunatics in England; as if it were within the limits of things possible, that any one in the responsible and confidential position of a medical superintendent would connive at, or in anywise be instrumental in the escape of one of his patients! The existence of such a penal provision, with others, in the English Lunacy Act (8 & 9 Vic., ch. 126,)—and re-introduced into the English Criminal Lunatic Act of the present year, as we have already referred to—is exceedingly preposterous, besides being most gratuitously insulting, and humiliating to professional men holding important public situations, and only too well calculated to lower them greatly in the eyes of their subordinates,—if not, in fact, a strong temptation to those very subordinates, if disposed to be revengeful and malicious, to aid and assist patients in their immediate charge to escape, so as to bring the superintendent into trouble, and suffer pecuniary damage. Dr. Sherlock enters largely and ably into the question which, of late, in particular, has been occupying much public attention—that of insanity being on the increase, and which, in his opinion, is entirely groundless. We are unable to find room for the proofs he adduces in support of this opinion, but which appear to us very satisfactory and convincing.

The general results of the year were as follows:—

	M.	F.	T.
Total under treatment during the year,	197	213	410
Of whom were discharged cured, . .	12	19	31
Do. do. relieved, .	4	2	6
Do. do. unimproved, .	1	0	1
Died, . . . . .	15	13	28
Number remaining at close of 1858, .	32	34	66
	<hr/> 165	<hr/> 179	<hr/> 344

Fourteen of the deaths arose from disease of the brain, and other central nervous masses; six from gradual exhaustion; four from phthisis; and four from asphyxia by drowning, disease of kidneys, phlebitis, and enteritis respectively.

The year's cost for maintenance was, £8508 19s. 11d., and no expenditure apparently, in tobacco, which is another very commendable feature in Dr. Sherlock's system of management.

sioners' in Lunacy Report, adverted pretty fully to St. Luke's Hospital, we have little more now to do than refer shortly to its own official reports for the year 1859. In them is contained a long list of the Governors, who amount to 181. Next we have a report from the General Committee of Governors for the year 1859, in which are lamentations unmistakeable in respect of the falling-off of applications for admission into the hospital, even though so much less stringency had been in operation in regard to the reception of inmates. On this head, the Report states:—

“Your Committee have to express their regret that, notwithstanding their endeavours to make known by advertisement, and otherwise, the advantages offered to the public, by the Resolution of the Annual General Court of 1858, which sanctioned the admission of curable patients at £1 1s. per week, the number of that class of patients has diminished during the past year. The number of ordinary applications for the admission of patients has also been less.”

This is a sad enough plight to have been brought to; but the Governors do not appear to have kept in mind the weighty truth that those having “sown the wind shall reap the whirlwind.” They would not heed the warnings and admonitions of the Commissioners in Lunacy, but resolutely bade defiance to them; and now they are feeling the consequences thereof, and for which we have no sympathy to offer them, or other advice than to bow with submission to the fate which is awaiting them,—a fate, too, of a most righteous description. We need say nothing further of St. Luke's, on the present occasion, than that the average weekly number of patients in the hospital during the year 1859 was 141 (51 males, 90 females), and that the expenditure incurred was £4,758 0s. 2d., with the details of which the worthy Governors have not been pleased to favour us in their lugubrious Report, which we now take our leave of.

13. A very remarkable feature in the report of the Omagh District Hospital for the Insane, a copy of which has only now for the first time appeared on our editorial table, is, that it publishes the names and residences, in full, of all the patients in the establishment up to the 31st of March, 1860; the same of all admitted during the year; ditto of all the re-admissions; ditto of those discharged recovered, improved, and unimproved; ditto, of pay patients; ditto, of escapes; and ditto of the deaths. We have also a list, in the minutest detail, as to name, &c., of the



several attendants, nurses, assistants, even to that of the post-boy ; and, further, the names of the respective contractors, the articles supplied, "foolscap" into the bargain, together with tobacco, snuff, and pipes, the latter at the extravagantly-high price of fourteen pence per 12 dozen.

This Report should be entitled "the book of the chronicles of Omagh," as regards insanity, for such it assuredly is to all intents and purposes, and quite an original of its kind, inasmuch as in our lengthened experience and varied acquaintance with insane "annuals," of every hue and complexion, and from all lands, we never before met with the peculiarly personal particulars, in respect of the inmates of an asylum, as is contained in the one before us. Now, may we be permitted to ask the *cui bono* of all these details, so tiresome even to look at ; so altogether uninteresting and unnecessary, besides so much mispent labour and time in copying out such lists, and also wasteful expenditure in printing them ; but, greater than all, so much needless exposure of those whom Providence has been pleased in his inscrutable wisdom to strike down to the ground with a fearful affliction,—one over which a veil, as far as possible, should be drawn, instead of this open and uncalled-for publicity, remembering always the pitiful appeals of those so afflicted, speaking to us, as it were, in such accents as "Have pity upon me, have pity upon me, O ye my friends ; for the hand of God hath touched me." We observe the names of several peers in the list of governors ; and, in all earnestness, we ask them how would they feel if a wife, or a sister, or a brother, were gazetted thus as the subject of madness ? The answer is plain. And have not each and all of those inmates of their asylum thus held up, in the most offensive and insulting manner, to public gaze, their relations, with feelings as acute and sensitive as the highest in the land—and should not those feelings, as well as those of the patients themselves, be duly respected ? We trust it is only necessary to call attention, as we now have felt it our bounden duty, to this matter, in order that Dr. West, the excellent and humane physician-superintendent, may no longer be coerced to be a party to this publishing of particulars of so delicate a kind, and to this "hue-and-cry" system of reporting, which would be so much better in the breach than in the observance ; and that we shall be enabled, in our next annual review in connexion with "Insanity, and Hospitals for the Insane," to state that the expurgation we have recommended in the Omagh Report has been carried into effect.

The first page in Dr. West's Report has reference to a sub-

ject which has occupied a large share of public attention during the last eighteen months—namely, the so-called “Revival movement,” which had its commencement in Ulster, and to which we have already made some allusion in the course of this review. His observations being very important and interesting at the present time, and coming before us thus authoritatively, we give them in full:—

“Before entering upon the report of the proceedings in connection with this asylum for the past year, I wish to make a few observations on the Revival movement, or, more properly speaking, upon a few of the twenty-six cases admitted into this asylum, and which were attributable to that movement as being the exciting cause; and adding a further proof of the utility of such institutions, provided advantage be taken of them in time, but which I regret to say has not been the case in all instances requiring aid. In corroboration of which I may state that I have heard from a person, on whom the strictest reliance may be placed, that several cases of insanity, which were said to be caused by the Revival movement, terminated fatally, the patients having been kept at their homes by their friends, probably with a hope that each succeeding day would bring with it some symptom of returning reason.

“With one exception, in all these cases in which religious excitement has been given as the proximate cause, there was a predisposition to insanity, either from their having had previous attacks of that malady, or from its having been hereditary.

“The exceptional case was that of a man who, at the time the movement occurred, had hardly recovered from an attack of low continued fever, during which his head had been very much engaged. The excitement and want of rest caused by his attendance at these meetings were too much for his constitution, already so much weakened, to bear with impunity; and the consequence was, in the course of a short time, his mind gave way, and he was at length admitted into the asylum, being at the time one of the most violent cases of acute mania I ever saw or had care of. He fancied himself the Lord’s Anointed, and with the greatest difficulty could be prevented stripping his clothes off, ‘for the purpose,’ as he said, ‘of dancing before the ark.’ This poor man was quite restored to his reason in the course of a week by merely procuring him sleep and quietness; but owing to the weakened state of his constitution from his previous illness, as well as from the exhaustion produced by the maniacal excitement, we were obliged to detain him in the asylum until his health became quite restored. I have lately been told that this man has continued perfectly well in his mind since he was discharged, having carefully avoided those religious meetings, or anything which might be likely to excite him.

“Another case was that of a woman, the mother of ten children, who had had an attack of insanity about three years previous to that which was caused by her attending the Revival meetings,

which she continued to do until within three weeks of her admission to the asylum. This poor woman was then observed to have both her eyes very much injured, and also the fore-finger of her left hand. Upon inquiry it was found that, in her mistaken zeal for religion, she had attempted to pluck out both her eyes, as being offending members; and when restrained from effecting her purpose, she, with the same object, bit her finger so severely that it was then in a state of sphacelus, or death from mortification, which was then rapidly extending up her arm; and although all was done by the visiting physician which possibly could be to arrest its progress, it terminated fatally on the fifth day after her admission.

“The history of the other Revival cases would also be found very interesting in many respects, if time and space would permit me to give them. But I shall merely add here, that I never felt so much the responsibility of my position, or passed so anxious a time, as during the care of some of these cases, four of which died, twelve still remain in the asylum, and ten have been discharged recovered.”

We have only to add to the above, that undeniable official records show that the number of cases of insanity in Ulster, arising out of the “Revival” there, and admitted into the public asylums of that province, amounted to 67, which surely ought to be a warning to those who fanned this flame of unholy zeal and excitement, to “consider their ways,” and for the time to come to “ask for the old paths, where is the good way, and walk therein.”

The next quotation we shall give, refers to the results of the year, as to admissions, &c., viz.:—

“Admissions, discharges, &c., during the year ended 31st of March, 1860.

	M.	F.	T.
In Asylum on 31st March, 1859,	127	120	247
Admitted to 31st March, 1860,	65	72	137
Total, . . . . .	192	192	384
Discharged:—			
	M.	F.	T.
Recovered, . . . . .	26	24	50
Relieved, . . . . .	7	8	15
Unimproved, . . . . .	9	11	20
Escaped, . . . . .	4	4	8
Died, . . . . .	10	15	25
	—	—	—
	56	62	118
Remaining in Asylum 31st March,			
1860, . . . . .	136	130	266

The principal causes of the deaths were, exhaustion, 9; phthisis, 6; bronchitis, 3; and other causes, 7. The years' expenditure was £5,174 18s. 2d., of which £30 4s. 6d. was for tobacco and snuff! No solid meat is allowed,—the dinner on “five days each week,” being soup (1 pint) and bread (12 oz. males, 8 oz. females); “Fridays” new milk and bread; and one day in the week *nil*, at least so we conclude from the diet table, but *six* days being provided for in it. The breakfast and supper consist of “porridge and new milk.” We would, therefore, beg to recommend an intercalary dinner day, and to allocate the money laid out for tobacco towards meeting its expense, as being much more needed for the patients.

14. The Report of the Aberdeen Asylum for 1859, is very satisfactory in its several details, which are all given with much minuteness and accuracy, as well as clearness, excepting its dietary, which is still withheld, very unaccountably, an omission to which we felt it our duty to call attention in our review of last year. The total number under treatment during the year amounted to 374—172 males, and 202 females. The recoveries were 42; the relieved, 12; unimproved, 4; and the deaths but 9, which was a surprisingly small mortality, and speaks well for the sanitary arrangements, &c., of the institution. The cost of maintenance was £6,452 2s. 10d., and in this we are happy to see that nothing is embraced for tobacco. In connexion with the period of time necessary for treatment, Dr. Jamieson observes:—

“The average duration of treatment in the recovered cases, involving a period of trial and confirmation of convalescence, was, even under all the favouring circumstances of asylum arrangements, not less than nine months—a statement suggestive of the amount of anxiety, tedium, expense, and disheartening influence attendant on the protracted domestic endurance of most of such cases, and of the great advantage of such an institution for all grades of the mentally-disordered.”

On the important subject of recreation, Dr. Jamieson states:—

“The patients have had their usual, or even greater amount of liberty and amusement, both within and without the walls. A large cricket park has been laid out during the past year on the Bark-mill ground, and has already been the arena of many well-contested games. Frequent parties have been formed for concerts, golf, fishing excursions, visits to the country, and occasional walks into town; whilst several of the inmates have spent evenings from time to time in the houses of relatives and friends.”



Here we must close our notice of the Aberdeen Asylum, whose general management, however creditable and liberal, would be still further enhanced by the particulars of its diet table being given for the future in the Report, otherwise so complete.

15. Not the least important part of the Report of the Belfast District Hospital for the Insane, for the present year, is the full account it contains of an official visit paid to it, at the close of last year, by Mr. Cardwell, M. P., our very efficient Chief Secretary for Ireland. That visit had reference to the best means of increasing the accommodation, so badly required by this Institution, it being in a very overcrowded state for some time past, with a large number of outstanding cases unable to be received from this cause, much to their detriment, and greatly decreasing their chances of cure by this unavoidable delay in their due treatment. Mr. Cardwell would appear to have taken every pains to acquaint himself on the spot with the views of the local authorities in respect of the course that should be adopted for affording such accommodation as would both immediately and prospectively answer the wants of the insane poor of all classes in the counties of Antrim and Down, the two counties embraced in the Belfast district. The unanimous recommendation of the very large number of Governors (presided over by the Bishop of Down) who met Mr. Cardwell was, that "the existing Institution should be kept for the reception and treatment of all recent and probably curable cases; and that another, and a totally distinct one, should be erected in a convenient locality, for all the chronic and probably incurable cases at present occupying the principal portion of the existing building, together with the large number of idiotic and other patients so badly circumstanced in the different Union work-houses and gaols of the district. This lengthened and influential meeting terminated thus:—

"MR. CARDWELL—I am quite aware of the great importance of what you have said, gentlemen. If you had increased accommodation for patients, they would not be either in your jails or your work-houses. What you wish the Government, then, to do is, that measures should be taken in the present state of the laws to supply such additional accommodation as would prevent the insane of any class being sent either to your work-houses or jails. You object also to the mode of government for Irish Asylums which has passed the Select Committee of the House, and you desire that that recommendation should not at present be carried out, while other deficiencies which

you have pointed out might be remedied under the present state of the law. I also understand you to say that, if there should be any increase of building accommodation for the reception of patients, it should be devoted to the purposes of a better classification, by withdrawing the harmless and chronic patients to an auxiliary institution, and not as a separate District County Asylum. I think, gentlemen, these are your views.

"The CHAIRMAN—Precisely, sir."

The results of the year's treatment, ended 31st of March last, were as follow:—

	M.	F.	T.	M.	F.	T.
In House on 1st April, 1859, ...	...	...	...	198	159	357
Admitted since, New Cases, . . .	48	67	115			
Relapses, . . .	3	2	5			
	—	—	—	51	69	120
Total under Treatment during the year, . . .				249	228	477
Discharged, Recovered, . . .	34	41	75			
Do., Relieved, . . .	9	13	22			
Escaped, . . . . .	1	0	1			
Died, . . . . .	17	8	25			
	—	—	—	61	62	123
Remaining under Treatment on 31st of March, 1860, . . . . .				188	166	354
Daily average number of patients during the year, 358.97.						

The general health of the inmates during the year is stated to have been very satisfactory, with an entire freedom from any epidemic illness; and the mortality was unusually small, being under 8 per cent. The cures were 21 per cent, taken on the yearly average of patients. The causes of the deaths which occurred during the year were:—

"Paralysis, six (males); general debility and gradual decay, four (three males, one female); epilepsy, three (males); exhaustion from continued acute mania, three (two males, one female); pulmonary consumption, three (one male, two females); apoplexy, two (one male, one female); cancer of hand, one (female); erysipelas of head and face, one (female); intestinal perforation, one (female); cerebral disease, one (male)."

Amongst the causes above stated is one under the head of "intestinal perforation," the particulars of which were very remarkable, and are thus recorded in Dr. Stewart's report:—

"Three days prior to dissolution occurring, this patient was in the enjoyment, apparently, of her usual health, and taking her food

regularly, no complaint of illness of any kind having been made on her part. On retiring to bed at the time above mentioned, she was soon after heard moaning loudly, which, attracting the attention of the nurse of her division, she lost no time in giving notice of her condition, which was attended to without delay; but all efforts at affording her any relief were unavailing, she, after enduring great agony for three days, succumbing to the attack. On subsequently making a *post-mortem* examination, the cause of death and severity of the symptoms were sufficiently manifest; for in the stomach and the course of the small intestines were found pieces of iron, portions of linen rags, two large nails, part of a tobacco pipe, several strong spines of the blackthorn, and five inches in length of a knitting-needle, with which the perforation was caused, besides a miscellaneous collection of debris, that evidently must have been swallowed for a considerable time, thus making it a matter of the greatest astonishment how life and apparent health had been continued under such extraordinary circumstances as the *post-mortem* brought to light. Her age at the time of death was forty-seven years, twelve of which she had been an inmate, and throughout a most impulsive, violent, and turbulent character, and of constantly destructive habits, as regarded clothing, bedding, &c., as well as being quarrelsome to a degree. Without any provocative cause, she would suddenly strike the person next her, and severely thump herself besides, and then scream and roar in a manner appalling to the ears, even of those well-accustomed to such outbursts and violences of the insane. Nothing was known of her previous history, further than that her occupation had been that of a domestic servant; but she could never be induced to engage herself in any employment here, however simple, finding pleasure only in sitting in the corner of the day-room or airing-court, with her apron thrown over her head, and scolding, &c., in the most outrageous manner, if interfered with in this her favourite posture."

Another remarkable occurrence of the year was the re-admission of a female patient after eighteen years' perfect convalescence,—“thus showing,” Dr. Stewart observes in connexion therewith, “the liability to a relapse of this malady, even after years of continued and entire freedom therefrom.”

In looking over the tabulated statement of the supposed immediately exciting causes of insanity in the new admissions which took place during the year, we find the large number of 16 under the head of “religious excitement,” 2 of whom only were males, and 14 females.

It would have been very desirable, in an official Report of this kind, had it been a little more explicit touching those cases so arising, and which, we presume, must have been part and parcel of the unfortunate results of the “Great Ulster Re-

vival Movement," of which we have been hearing so much as to its "blessed" effects—effects, however, terminating just as might have been expected, in upsetting reason upon her throne in innumerable instances, with the excitable and weak-minded, owing to its unhallowed novelties, and strange teachings. Under the head, too, of "Grief, Disappointment, and Anxiety," are so many as 23 (8 males and 15 females), which, if the real facts were known, would very probably be found to embrace not a few "struck" ones also.

A "brass band," we find, has been established amongst the patients of this Institution since last year, and with the happiest success, the inmates, generally, being quite delighted with so enlivening and care-dispelling a source of amusement—one which it would be so desirable to see introduced into every asylum, and carried out to its fullest extent.

Another very desirable matter, also, has been effected here since last year—that of erecting a steam-engine for pumping water for the supply of the Institution, instead of raising it, as hitherto, by the labour of the inmates, which was anything but suitable employment, being monotonous and too much of the prison character, as well as too laborious, for those the subjects of a disease admittedly characterized by debility of the general system in the great majority of cases. Employment of this kind should be discountenanced in every such establishment.

We have only further to add, that walks into the country from time to time of a large number of the patients were undertaken last year, and with the most satisfactory results,—the breathing of the open air thus unrestrictedly, and joining once and again in this manner with the human family outside, giving the patients a new ray of hope, well calculated to arouse their dormant faculties, and dispel their tormenting fears of never again being freemen.

16. We find, from the Report of the Wilts County Asylum, that an additional ward for female patients was brought into operation last spring, which has greatly relieved that department, it having been much overcrowded. The total number under treatment during the year ended 31st of December, 1859, was 459,—the males being 200, and the females 259,—thus reversing the usual order, the male sex generally having the advantage in point of number in such institutions. The following statement indicates the year's results:—



	M.	F.	T.
In the Asylum, 1st January, 1859,	146	197	343
	M.	F.	T.
New admissions during the year . . .	46	52	98
Re-admissions, . . .	8	10	18
	—	—	—
	54	62	116
Total under care during the year,	200	259	459
Of the above were discharged:—			
Recovered, . . .	22	32	54
Relieved, . . .	5	3	8
Not improved . . .	2	0	2
Died, . . .	33	24	57
	—	—	—
	62	59	121
Remaining under treatment, 31st Dec., 1859, . . .	138	200	338

As usual, in Dr. Thurnam's excellent and practical Reports, there is a large number of tables contained in this one, showing satisfactorily the movements of the institution during the year; but we miss one which we think would be desirable to have to refer to in every Report of this kind, namely, the period of time each patient "discharged, recovered," was under treatment.

With reference to the death casualties of the year, which were comparatively large, Dr. Thurnam affords the following simple and unvarnished explanation:—

"Many were of persons far advanced in life, or who had been brought to the asylum in a diseased and exhausted state, whose condition, when admitted, could only be pronounced hopeless. Nearly half of the whole number, or 27, were persons of 60 years and upwards; 12 being from 70 to 82 years of age. The annual mortality, which for the previous 7·35 years has averaged 10·7 per cent., has this year been at the somewhat high rate of 16·8 per cent.; which, it may be presumed, under favourable circumstances, will, to some extent, be compensated by a reduced mortality in 1860."

Among the causes of death, the following were the principal:—Chest affections, 13; gradual exhaustion, 10; apoplexy, 7; disease of the heart and lungs, 6; cerebral disease, 4, &c.

Dr. Thurnam gives some interesting particulars respecting two of the "recovered" cases, who were in the relation of husband and wife, both having become insane from intemperance, and both discharged together,—the husband at the end of two months' treatment, and his wife after being three months an

inmate. It was apprehended that a relapse would have occurred, the fear being a return to their bad habits, as so frequently happens in such cases; but, happily, not in those, both being subsequently reported to Dr. Thurnam to have become patterns of sobriety and steadiness, and enjoying a measure of happiness to which hitherto they had been entire strangers. During the year, twelve patients left the Asylum "on trial," and none had to return, all having either perfectly recovered, or improved sufficiently with their friends to remain at large. On this subject Dr. Thurnam states, that "he was more and more convinced of the good effects of this method, in the case of many who, after recovering to a certain extent, continue in an unsatisfactory state in consequence of 'home sickness,' or who, regarding themselves as improperly detained, become fretful and irritable; or, considering their cases hopeless, cease to exert that self-control which is needful for perfect recovery." We entirely concur with Dr. Thurnam in the above remarks, and consider it would greatly tend to an increase of the recoveries of the inmates of hospitals for the insane, were the plan of sending them out "on trial" one of general adoption, and made a part of their regular system of treatment.

Dr. Thurnam, in referring approvingly to the very satisfactory working of Price's warming and ventilating apparatus, goes on to say:—

"It has of late years been proposed to dispense with any such artificial mode of warming in the construction of Asylums, and to trust entirely to open fires. It appears, however, to the Medical Superintendent that by this means an adequate temperature could never be insured; and that at night, at least, the patients would be exposed to a degree of cold which they manage to escape under the thatch of their own dwellings. If, as is most essential, well-lighted and spacious buildings be constructed for the insane, it becomes all the more requisite to provide for their being duly warmed in winter, which no number of open fires available—seeing these can hardly be afforded in every sleeping-room or associated dormitory—would secure."

Here also Dr. Thurnam (one of the first authorities of the present day in all matters connected with Asylums and their inmates) and ourselves are of the one mind. We really know of nothing of more vital importance in the every-day treatment of the insane than a comfortable and a well-regulated temperature by night as well as by day, which cannot be obtained by open fires alone. We have always advocated, in these annual reviews, the necessity of this, and we are now extremely glad to find that so highly qualified a man as Dr. Thurnam is of the

same opinion, and is enabled to act upon it. Every new Asylum should be provided with such an apparatus as that of Price's; and, being so, their usefulness will be enhanced to a much larger extent than, *à priori*, might be imagined. Had we room at command, we could dispose of it to the best account, by dipping more deeply into this excellently-arranged Report of the Wilts Asylum by Doctor Thurnam; but we must not further occupy our limited space than to refer shortly to the expenditure of the year, which was £6699 17s. 5d., one item of which, in particular, namely, £500, as the salary to the Physician-Superintendent, is very creditable to its paymasters for comparative liberality, as a *quid pro quo* for the rendering of services for which no money remuneration almost could sufficiently compensate, and which should shame the Colney Hatch Committee in respect of the niggard spirit in which their Medical Superintendents are required for the tremendous amount of labour and responsibility put upon their shoulders,—so great as to tax their mental and physical powers to the utmost. But we have still to lament that “tobacco, snuff, and pipes,” are sanctioned to the present time by Dr. Thurnam, and that £40 were expended upon articles so entirely unnecessary, so foul, and so hurtful. Far be it from us to diminish in anywise from the comforts of the insane; we would desire to increase them more and more; but certainly not in pandering to any such injurious “comfort” as that of tobacco in any form.

17. Dr. Bushnan's *brochure*, in connexion with “Religious Revivals,” takes a very just and common-sense view, professionally, of a subject which has been so much before the public for the last twelve months and upwards,—one which medical men could not pass by unnoticed altogether, the effects of these revivals having been such as to make it a matter of bounden duty on their part to point out the serious consequences arising therefrom, on the physical and mental health of its devotees: these consequences being hysteria, catalepsy, epilepsy, and insanity, either permanently, or, at the very best, of painfully tedious duration. “Facts are stubborn things:” and, unfortunately, it so happens, that there are too many such now on indisputable record to bear out the above statement as to the pernicious results of the “Revival” excitement we have been eye-witnesses of these days, in its several melancholy phases. As we have already, in the course of this review, made several references to the matters upon which this pamphlet of Dr. Bushnan so ably and effectively treats, it will be superfluous to

do more in regard to it here, than to say that its attentive perusal cannot but be productive of good to all classes of readers, especially to those who have, as we charitably hope, "out of an honest and good heart," lent themselves and their influence in support of a so-called "religious movement," which has caused so many to become the victims of insanity in its most aggravated form; and, still worse, not a few to become mothers, without knowing who were the destroyers of their virtue. Alas! alas! that the name even of religion should thus have been prostituted, and basely perverted; but so it unquestionably was; and this generation will not live to see the finale of its baleful effects.

18. We have before us the Sixteenth Annual Report of the New York State Asylum; together with copies transmitted at the same time of the 11th, 12th, 13th, and 15th, the last one we were afforded the means of reviewing being the 14th. On that occasion<sup>a</sup> we felt called upon to animadvert on the irregularity with which this report was furnished since the decease of the former superintendent physician, Dr. Benedict, but not with any good result; which, however, does not affect us. If superintendents are thus indifferent, and we regret to see that there is so much of this on their part, be it so; we have done, and shall continue to do, our duty, without favour or affection, as reports reach us. It is by the medical officers of the New York State Asylum, we may here observe, that the "Journal of Insanity" is edited, and with whom, we presume, rests the responsibility of its interchange with ourselves and the other medical periodicals; but, so far as we are concerned, not a single number of that journal reached us during the last twelve months—(is it still in existence?)—a journal, we may remark, that never came regularly; in consequence of which we have been obliged to strike it off our exchange list, and which will account for our heading to this article not including it in our books for review on the present occasion.

Having made the above preliminary remarks, we proceed to state that the sixteenth Report of the New York Asylum brings the operations of that large establishment, under the able superintendency of Dr. John P. Gray, to the end of November, 1858, during which year it had under treatment 784 patients, in the relative proportions of 410 males, and 374 females.

<sup>a</sup> Vol. xxvi., No. 52, N. S., p. 359, for November, 1858.



The number of admissions for the year was 333 (172 males, 161 females), and the average daily population, 489.

Results of the total number treated:—

	M.	F.	T.
Discharged, recovered, . . . .	66	48	114
Do., improved, . . . .	15	18	33
Do., unimproved, . . . .	45	54	99
Not insane, . . . . .	3	2	5
Died, . . . . .	21	10	31
<hr/>			
Total discharged and died, . . .	150	132	282
<hr/>			
Remaining under treatment, 30th			
Nov., 1858, . . . . .	260	242	502

It will be observed, by the above statement, that the deaths were remarkably few in such a community, being only 6.33 per cent. on the average daily number; but it will be also noticed that the number discharged “unimproved” was, on the other hand, unusually large, so that it is only fair to conclude that not a few of that number went home merely to die, who, had they remained in the house, would have brought the mortality up to what is usual amongst the insane, even under the most favourable circumstances, that is to say, ten per cent. at least. The causes of death were:—Maniacal exhaustion, 13 (10 males, 3 females); phthisis pulmonalis, 6 (4 males, 2 females); general paralysis, 4 (males); old age, 2 (1 male, 1 female); meningitis, 1 (male); syncope, 1 (male); abscess, 1 (female); paralysis, 1 (female); pneumonia, 1 (female); suicide, 1 (female). The instance of suicide was that of a lady, admitted for the second time, who had not hitherto manifested any suicidal tendency, and who accomplished her purpose by suspension. And, touching this casualty, we are glad to find that the suggestion we made in our notice of the Fourteenth Report of this institution<sup>a</sup> has been attended to in this one, by giving the particulars thereof, and not overlooking them altogether, as we found to be the case in this and other Transatlantic Reports, in reference to suicides which had occurred in them.

We have observed, with much satisfaction, that in the New York State Asylum, with an average daily number under 500, which is only about a fourth of the population within the walls of the Colney Hatch Institution, the medical staff consists of one chief, and three assistant physicians—a staff, too, that is

<sup>a</sup> See Number for November, 1858, p. 360.

considered in very moderate proportion for that number, those officials having quite enough of labour and responsibility on their hands. What must, therefore, be the conclusion drawn from the miserably stinted medical staff of the great English Metropolitan Asylum, which has only five medical men to conduct the general treatment of its huge mass of insanity, but that it is manifestly inadequate for the purposes intended, besides being unreasonable, we might more properly say, cruel to a degree, the imposing on five the work which would be amply sufficient for employing the mental and physical energies of three times that number at least?

Dr. Gray's Report on the present occasion is very interesting in many respects, and proves him to be well qualified to be at the head of an important institution, like that of the New York Asylum, the management of which is evidently looked after with every professional care and humanity, and quite in keeping with this age of progress. Reference is made in it to an "Inebriate Asylum," about being opened at Binghamton, for the victims of intemperance, and their due treatment, which would be an invaluable and a most needful institution to have in these countries, together with an establishment for the middle classes, the subjects of insanity, who are unable to meet the lowest rate of board of a private asylum, but who could meet the charges of one, between a public and a private hospital for the insane.

19. In our Annual Review on "Insanity, and Hospitals for the Insane" of last year, our list contained the first Report of the Select Committee appointed by the House of Commons "to inquire into the operation of the Acts of Parliament and regulations for the care and treatment of lunatics and their property," and now on the present occasion we have before us, for notice, two further very valuable Reports, since issued, on the same important subject, the contents of which, however, being so voluminous, and our remaining space so limited, that we can do little more than rapidly run through their pages.

The inquiry in question had only reference to England and Wales; but had it been extended to Ireland, it would have been most desirable, inasmuch as the "Royal Commission," appointed a few years back in regard to the insane in this country, has proved a dead letter, its composition having been so infelicitous as to have had no weight whatever with the public, and consequently its proceedings proved (as they deserved) a complete *brutum fulmen*. Indeed, before any new lunacy legislation can be attempted in Ireland, the ground-work thereof

will have to be a full and impartial inquiry before a Select Committee of the House of Commons, where alone such can be carried through with effect, and which has already been earnestly petitioned for by some of the local Boards of Governors.

To return, however, to the Reports now under consideration, we think it well, in the first instance, to give the names of the members of the Committee from which they emanated, and which were as follows:—Mr. Tite, Sir G. Grey, Mr. Walpole, Mr. Whitbread, Mr. Drummond (since deceased), Sir Erskine Perry, Colonel Clifford, Mr. Briscoe, Mr. Kendall, Mr. Horsman, Mr. Rolt, Mr. Monckton Milnes, Mr. Henley, Mr. Coningham, and Mr. Kekewich. The proceedings in connexion with the Report presented to the House on the 5th of August, 1859, commenced on the 7th of July previously, and occupied the attention of the Committee for nine successive meetings, the average attendance being eight, and Mr. Walpole chairman throughout. Amongst the witnesses (thirteen in all) examined before the Committee, whose evidence is given in this Report (containing 2448 questions and answers), were Dr. Bucknill, fifteen years the able Physician-superintendent of the Devon County Asylum; Dr. James Coxe, one of the Scotch Lunacy Commissioners; Mr. Lutwidge and Colonel Clifford, of the English Lunacy Commission; Dr. George Webster; and Dr. John Bright. The evidence of Dr. Bucknill, who spoke, it might be considered, the sentiments of his brethren generally, is pretty extended, occupying eight pages, and had reference, in a large measure, to the details of management of his institution, so celebrated for administrative excellence; such as the class of attendants employed, and their conduct towards the patients as to striking or otherwise ill-using them, on which latter head Dr. Bucknill was clear and decisive, stating that cases of deliberate cruelty were extremely rare—the exception to the rule—and did not exist to any extent in public asylums. With him the invariable practice was to dismiss, summarily, any attendant who “deliberately” struck a patient; and that proceeding in this way had a most salutary effect on the attendants, who, he observed at the same time, had duties of the most arduous and trying description to perform—in fact, “their work was so very disagreeable and onerous, that it was astonishing to him how they met with such good men who were willing to undertake it.” He was closely questioned on the subject of wages, and the propriety of such being raised, in order to insure a better and more humane class of attendants. He strongly advised both an increase of wages—

which ranged in his Asylum, for males, from £20 to £30, and for females from £12 to £20 per annum—and an increase in the number of attendants, observing, very properly, that one cause of acts of cruelty occurring in asylums was putting too many patients in the charge of one attendant, which irritated and tired him, and ultimately spoiled his temper. He was decidedly in favour of asylums being founded for “middle-class patients,” which, in the first instance, should be tried as an experiment, by building one or two, the expense being provided from the national funds, which, we think, was a very good suggestion. On the other hand, he entirely disapproved of pay patients and paupers being placed under the same roof, as any sensible man necessarily must. This experiment had been tried at the Gloucester Asylum, and had to be given up as an incompatibility.

Dr. Bucknill, in continuation of his important and practical evidence, stated that, at the present time, there was one matter in particular against which the Medical Superintendents of public asylums had to struggle, and owing to which they were placed in a very false position, which was the overcrowding of patients—“putting too many in a ward, and too many beds in a dormitory, and having too many patients in the same room, both by day and by night.” With regard to single rooms—which, he observed, were considered by many of the patients “a comfort and a luxury”—Dr. Bucknill stated that the smallest proportion, to be satisfactory, should be a third of the entire accommodation,—just as we have observed, in a preceding part of this Review, in remarking on Dr. Lalor’s paper,—to be at least provided for in every public asylum.

Dr. Coxe, in his evidence, objected, in common with Dr. Bucknill, to pauper patients and private patients being under the same roof. His evidence as to cruelties being practised towards patients concurred with Dr. Bucknill’s, also, namely, that such were rare in public asylums, their occurrence being principally in private houses. He stated that the wages paid to attendants in Scotland were—to males, £20 to £30; to females, from £10 to £16. Mr. Lutwidge’s examination bore principally on the duties, &c., of the Commissioners in Lunacy, and with respect to details in connexion with “Chancery lunatics.” Dr. George Webster’s evidence was valuable, bearing as it did on many practical points, and given by a member of our profession of much experience. He objected altogether to congregating together a large number of the insane, as in the Surrey Asylum, such being most unfavourable to their recovery; and that of 950 inmates now in the Surrey Asylum, there were not



20 that could be considered curable! In answer to Sir George Grey's question (2323), "What is the largest number of patients that you think ought to be in an asylum?" he replied—"There is a difference of opinion upon that question. I think 300, or 400, perhaps." Dr. Bright was examined almost entirely in respect of Chancery lunatics, he being one of the physicians acting under the authority of the Lord Chancellor with reference to lunatics consigned to his Lordship's care.

We next come to the final Report of the Select Committee, that presented to the House on the 27th of July last; this re-appointed committee commencing its sittings on the 17th of April, and ending on the 24th July, during which nine meetings were held, with the same average attendance of eight members, and Mr. Walpole, the chairman, as before. The names of the witnesses on this occasion, and as examined in the following order, were—Mr. Joseph Elmer, clerk in the office of the Masters in Lunacy; G. Bolden, Esq., solicitor of the "Alleged Lunatics' Friends' Society;" Dr. Hood, Physician-superintendent of Bethlem Hospital; J. T. Perceval, Esq., Hon. Secretary of the "Alleged Lunatics' Friends' Society;" and the Right Hon. the Earl of Shaftesbury, Chairman of the Commissioners in Lunacy. Dr. Hood, in the course of his evidence, suggested the appointment of ten or twelve district inspectors, in conjunction with four, instead of six, of the existing paid Commissioners in Lunacy, for the better supervision of the insane of all classes,—these inspectors to be selected, as he thought they should, from amongst the best educated medical superintendents, at salaries of £700 per annum, which would be a small increase on their present emoluments of office, such being, on an average, about £600 per annum. Lord Shaftesbury, in his evidence, objected altogether to the appointment of district inspectors, or assistant-commissioners, his opinion being, that, with some slight additional powers, and some simplification in the duties of the Commissioners in Lunacy, the present number (six) of paid Commissioners would be quite sufficient for all purposes; and that, in the event of an increased staff being requisite, it would be better, in his judgment, to add to the number of principal Commissioners, than to appoint an inferior order under the title of "District Inspectors." The questions in this last Report number 416; then follows an appendix, containing the various suggestions, *in extenso*, as offered to the Committee by the witnesses, &c.

This final report, founded on the Committee's proceedings carried on for three years, shows that the total number of the insane of all classes, including those in work-houses, and

with friends, amounted, on the 1st of January, 1844, until which there were no data to form an accurate opinion as to the status of insanity in England and Wales, to 20,611; on the 1st of January, 1858, to 35,347; and on the 1st of January, 1859, to 35,982.

*Proportion of Insane to the general population in England and Wales.*—The report states on this head—

“It is a melancholy fact that out of every 600 in England and Wales, one, at least, is in such a state, that, in many respects, he is incapable of managing himself and his affairs. A vast proportion, no doubt, are cases either of natural idiocy, or of mental imbecility, arising from age, epilepsy, fits, and other causes, where the maladies may be regarded as chronic or incurable. With regard to them, little more can be done by any laws, however wise, or any regulations, however prudent, than to provide the patients with such comforts as their circumstances will admit; but with regard to others, since 50, or 60, or even 70 per cent., are capable of cure, if taken in time, and carefully treated, it is certainly a matter of primary importance that our legislative provisions should be so framed as to promote the accomplishment of this desirable object.”

*Number of Insane in Work-houses—their deficiencies, and suggested remedies.*—As regards these all-important points, the committee thus express their views:—

“The chief evil for which a remedy is required, is the detention of a large number of pauper lunatics in Poor-houses. The number of these lunatics amounted to no less than 6800 on the 1st of January, 1857; and on the 1st of January, 1859, to 7632. The law relating to this class of lunatics is, certainly, in an unsatisfactory state. By the Poor Law Amendment Act, the detention in any work-house of “any dangerous lunatic, insane person, or idiot,” for a longer period than fourteen days, is expressly prohibited; and the word “dangerous” is read as applicable to each of the three classes of mentally disordered persons who are there mentioned. But, with regard to those who are not dangerous, the statutory provisions are ambiguous. On the one hand, it seems to have been contemplated by the Legislature, that all pauper lunatics should be sent to some asylum, registered hospital, or licensed house, under an order by justice, or justices; on the other hand, there are provisions in the same Act, and also in another Act of Parliament, passed in the same Session, which seem to recognize, to a certain extent, the detention in work-houses of paupers deemed by law to be insane. The consequence is, that large numbers of pauper lunatics are kept in these houses without a certificate of their mental condition, and without an order from any magistrate regarding them as

lunatics, although a large portion of such persons, especially in the rural districts, may be correctly described as harmless lunatics, who, if kept under a slight degree of supervision, are capable of useful and regular occupation, or whose infirmity of mind is consequent on epilepsy, or paralysis, or fatuity from old age. It cannot be denied that, with regard to those who are really lunatics, there is a great absence of proper supervision, attendance, and medical treatment. In some work-houses, there are not even separate wards; mechanical restraint is frequently applied, because the imperfect state of the accommodation will not admit of a better mode of treatment; in many cases the medical officers of a union cannot have the special knowledge requisite for the management of the insane; and it may generally be concluded that the special appliances of a union work-house are not by any means equivalent as to this class of inmates to those of a lunatic asylum. The state of the law, on this branch of the subject, appears to require amendment. Your Committee are not prepared to recommend that all these cases, without exception, should be removed to asylums; but they are of opinion, that no person should be detained in a work-house respecting whose sanity a doubt exists, without a medical certificate, renewable quarterly, stating that the patient is a proper patient to be kept in the work-house; that there should, if possible, be distinct wards for such patients, with distinct attendance; that the guardians of the union should specially visit such patients once in each quarter, and make a special entry, on each such visit, of their state and condition; that the Commissioners should also visit them at least once in each year, and that the same power of removing any patient to any asylum should be given to the Commissioners as that which the justices now have."

*Condition of the County and Borough, or Public Asylums.*  
—It redounds greatly to the credit of the public asylums, that notwithstanding their embarrassed condition, almost universally, in respect of being overcrowded, and otherwise impeded in their good working, that the following high testimony is enabled to be made in reference to those invaluable institutions:—

"It appears from the evidence that the public asylums are, generally speaking, so well looked after, and so carefully attended to, that, as regards them, but little alteration is required in the law. In some cases it may be a question whether they are not, in their structure, inconveniently large, whether the staff of attendants should not be increased, whether higher remuneration in some instances should not be given; and whether it might not be advisable to erect, in connexion with them, detached buildings, of a simple and inexpensive character, for the reception of imbecile and chronic patients. But these, and the like matters, require no alteration in the law, and may well be left to the visiting justices to regulate and

determine, acting in communication with the Commissioners in Lunacy and the Secretary of State."

We regret very much that the Committee have not recorded a more decided opinion than the above extract conveys against the increasing evil of the present day in respect of over-populating asylums, and this, too, under the grievously mistaken idea of such being more economical, as if the pounds, shillings, and pence view was the primary one in the estimation of "visiting justices," who, through ignorance, self-sufficiency, and parsimony, all combined, are thus sacrificing the interests of the poor and much afflicted insane, whom to leave to their continued tender mercies will indeed be nothing short of disastrous. What a burlesque, is it not, on the part of this three years' sitting committee, gravely and deliberately to say, as they have in the quotation now made, in connexion with the size, &c., of public asylums, "that those, and the like matters, require no alteration in the law, and may well be left to the visiting justices to regulate and determine, acting in communication with the Commissioners in Lunacy, and the Secretary of State;" when it is so notorious that both the latter-mentioned authorities have been again and again overridden by those selfsame omnipotent-to-do-evil "Justices," in matters of vital moment to the insane; so that nothing short of the direct and immediate interference of the legislature, as we have ourselves more than once stated, will be sufficient to stop them in the pernicious course they have now been so long pursuing with impunity. The conduct of the "Visitors" of the asylums at Colney Hatch, Hanwell, and Surrey, and this, too, under the very eye of the Government, in pertinaciously carrying out their own crude views, patently shows that they are not the parties to be longer entrusted with powers, which have proved far from propitious in their hands.

*Superannuations to Medical Superintendents.*—We have room but for one more extract on the present occasion from the Report, that on Superannuations, which is as follows:—

"It would, further, seem desirable to reduce the term at which committees of visitors may grant superannuation allowances to their medical officers. Their duties are so peculiar, and such painful consequences are known to result from incessant intercourse with the various forms of this distressing disease, when prolonged for many years, that your Committee believe it would tend to greater efficiency of service, if the period, which stands at present at twenty years, were reduced to fifteen."

With reference to the above recommendation, one coming



with all the potency of a very influential Parliamentary Committee, we cannot but express our strongest approval, as an acknowledgment of what is eminently deserved by public servants, who, of all others, are engaged in the constant performance of duties of the most trying, and painfully anxious nature—services, we must say, that have hitherto been but ill-requited, and in no respect appreciated as they ought and should by the public. Now, let the outer world just imagine a professional man being imprisoned, for it is nothing less, during the best of his life, with the human family, in hundreds, in all degrees of mental wreck and degradation—obliged in the discharge of his onerous duty to be, morning, noon, and night, a witness and hearer of their sufferings, real or imagined, and as far as possible a soother thereof—exposed, too, to imminent personal danger from the refractory and homicidally-disposed portion of his charge—kept in continual dread by the suicidal patients, accomplishing their object notwithstanding all his care and precautions; imagine all this, and more, being endured for fifteen or twenty years, and say, is not that man well deserving of his *otium cum dignitate*, after having been so long a benefactor to his species under circumstances, of all others, the most arduous and severe? Well might Lord Shaftesbury, in his former evidence before the Committee (and all honour be to him for the decided and powerful manner in which he spoke on behalf of the Medical Superintendents and their assistants in immediate charge of asylums), state that—

“The wear and tear upon the nervous system of the Medical Superintendents and the attendants is such, that it may be considered almost a standing miracle that so many of them can bear it for the whole twenty years, before they arrive at the period of superannuation. I have received accounts from the attendants, and from the medical men themselves; and their statements go to show that, in proportion to the whole number, there are more cases of insanity arise among the medical men who are so employed, than from any other class. The Committee can well imagine what it must be to be perpetually in the presence of lunacy, some of them in the most exalted state, and some most despondent, but never hardly to pass a night in which they are not disturbed—never to associate with others, nor to have any holiday, or recreation, or any relaxation of any kind—to be perpetually in the presence of these lunatics—it has the most lowering, and most miserable effect upon the nervous system.”

Such, then, is the testimony of Lord Shaftesbury, a high authority, and a source the most disinterested as to the duties, &c., of the internal officials of lunatic asylums—which makes it need-

less for us to say more on this subject, further than that it is to be trusted, when any new legislation takes place, not only will superannuations be given, as now recommended, at the end of fifteen years, *as a matter of right*, but that also the entirely insufficient salaries of the medical superintendents, except in a very few instances, will be largely increased, and thus hold out a *bonus* for "the right man being in the right place;" and as a further inducement to so desirable an end, that it may be an understood thing that, as vacancies occur amongst the Commissioners and Inspectors in Lunacy that such be filled up from the ranks of the Superintendents. Let these only just and reasonable matters be "the order of the day" for the time to come, and the sane and the insane of all classes will be the great gainers thereby.

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*A Manual of Human Microscopic Anatomy.* By A. KÖLLIKER, Professor of Anatomy and Physiology in the University of Würzburg. London: Parker and Sons. 8vo. pp. 633. 1860.

THE enunciation of the theory of the cellular development and structure of vegetables by Schleiden, in 1838, prepared the way for, and led to the theory of Schwann, published in the same year. Thus the doctrine that there was "one common principle of development for the elementary particles of all organised bodies: the two kingdoms of nature being intimately connected by this community in the laws of development of plants and animals," to which many facts had been tending, became established, and the "*cell theory*" of Schwann was recognised. Hitherto it had been held that all animal tissues were developed, and grew by means of a secretion, or deposit from vessels; but now it was established, that they took their origin from, and grew by means of cells, which often preceded the existence of all vessels, and were themselves strictly extra-vascular. As many vegetables were, even in their mature state, simple cells, and as vegetables of a higher class had their origin in, and grew from, a cell, which, by successive multiplications and modifications of itself, elaborated and formed the whole structures of the plant; so was it found that animals grew and were developed on the same plan; that even the highest of them took their origin in a simple cell, which, by successive multiplications of itself, gave rise to a structure out of which all the tissues and organs were developed.

This theory of Schwann's, which nearly all subsequent researches have but served to illustrate and confirm, served as a starting point, from which the sciences of anatomy and physiology have, of late years, been bounding forward with amazing rapidity towards completion. The workmen who have been engaged in carrying out the idea of Schwann have been innumerable, and the facts collected threatened to overwhelm us by their number and importance, till Todd and Bowman undertook the task of reducing them to order, and published, in 1845, their admirable "Physiological Anatomy," comparing and collating all that had been already done; expunging the results of imperfect and hasty observations; retaining what was established; and adding to the store from their own well-made observations.

Inspired and guided, we believe, by our countrymen, Kölliker undertook for the Germans what Todd and Bowman had done for us—hence the "*Gewebelehre*," which now, for the second time, makes its appearance in English,—at first, translated by Messrs. Busk and Huxley, for the old Sydenham Society; now again translated, and republished, by Parker and Son, under the general superintendence of Dr. George Buchanan.

This work differs from that of Todd and Bowman, in that it is devoted almost exclusively to microscopic anatomy. It is, says the author in the preface, "in the main, a condensed version of the second German edition (of 1855), of my '*Handbuch der Gewebelehre*;' but every material addition that has been made to human microscopical anatomy, up to the present date, will be found incorporated in it. The book is, therefore, brought well up to the third German edition, that of 1859."

To give anything like an analytical review of a systematic work like this, were simply impossible. We must be satisfied with dipping into it here and there, and culling such "sweets" as we may. One point we must explain. In stating the measurements in the original, the author adopted the Paris line, equal to about  $\frac{1}{11}$  (0·0888138) of an English inch,—now very generally adopted on the Continent, and in English works too, we believe,—as his unit, and used the signs " for "of a line," and " for "of an inch." Throughout this edition, as in the Sydenham one, the same system is adopted; but in this edition no explanation of these cabalistic signs is given, which must make them puzzling enough to the uninitiated.

We perceive that since the publication of the former edition of the work, the author has modified his views somewhat,

as to the structure of cells, as will be seen in the following extract:—

“ Quite recently *Donders*, in a very remarkable paper, has asserted, that all cell-membranes consist of one and the same, or at least of very closely allied, substance, which agree in their properties with the substance of *elastic tissue*. I, for my part, am of opinion, that all animal cell-membranes consist *originally* of the same material, and, indeed, of a *proteine compound*; but that, in consequence of subsequent metamorphoses, differences of composition and reaction may arise. Thus many membranes become, in the course of time, more resistant, and approximate, as *Donders* correctly states, to elastic tissue; others become transformed into gelatiniferous tissues, like those of the formative cells of connective tissue; others, again, into syntonine, as in the smooth muscular fibres, others into horns, etc., etc. If we adopt a *proteine compound* as the primitive cell-membrane, as we are constrained to do from the reaction of young cells and embryonic parenchymas, there results an agreement with vegetable cells; seeing that in this case the *primordial utricle* of the latter, which consists of a *proteine substance*, may be regarded as the analogue of the animal cell-membranes; whilst the cellulose membrane appears as a secondary formation, as a product of excretion. This may be the case in the animal tissues of the *Tunicata*, which are composed of cellulose; in which case, my assertion, that, in the latter, cell-membranes composed of cellulose occur—and that of *Schact* (*Müll. Arch.* 1851), that they are nitrogenous—would be compatible. If the future justifies this comparison of animal-cells with the primordial utricle of plants, which I do not doubt, all the chemical metamorphoses of the cell-membranes *would*, very probably, *be owing to deposits which are precipitated on their outer side*, similar to the cellulose in plants; so that, besides the original *proteine membrane*, other secondary elastic membranes, or gelatinous envelopes, etc., would require to be distinguished. In this case we could say, that even the most important thickenings of the animal-cells take place on the external side of the *proteine membrane*, seeing, for example, that the original cell-membrane is still to be met with within the ossified cartilage-cells.”

This duplication of the cell-wall may be more clearly understood from the description of the cartilage-cells.

“ In form, the cartilage-cells present but little that is peculiar; they are mostly round or oblong, frequently flattened or fusiform, very rarely stellate (in *Cephalopoda*, *Rays*; in *Enchondromatous* growths). Their membrane is delicate at first; but subsequently becomes, in most places, covered on its outer side with a second layer, which bears the same relation to it as the cellulose-membrane of vegetable-cells does to the primordial utricle. Accordingly, there are two parts to be distinguished in cartilage-cells:—1. *The proper*



cell, or the *primordial utricle* (the cartilage-corpuscle of authors), an extremely delicate-walled cell, filled with contents sometimes clear and fluid, sometimes dark and firm, together with a nucleus; and, —2. The *external secondary membrane*, or the *cartilage-capsule* (the cartilage-lacuna of authors), a firm, clear, or yellowish layer, formed by an excretion of the primordial utricle, and closely surrounding the inner cell. By continued excretion from the latter, deposited upon its inner surface, the outer cell-wall may attain a laminated appearance, and a very considerable thickness. The contents of the delicate cartilage-cell coagulate and shrink up on the addition of many re-agents, and even of water; so that an interval is formed between it and its capsule, and it becomes converted into a dark and jagged corpuscle, without any distinct nucleus, the nature of which it is difficult to recognise."

In like manner, the author's views as to the development of cells; have altered somewhat since the publication of the Sydenham edition of his work,

Schwann believed that cells were chiefly developed in a free cyto-blastema, prepared by the influence of other pre-existent cells, but that the new cells were developed independently of any direct aid from the cells which prepared the material.

In the Sydenham edition the author states, that this free cell-development does not occur in man and the higher animals so frequently as has been assumed, and that but few examples of the process can be adduced; and the editors assert, in a note, that there is no evidence of its occurrence even in these instances. In the present edition, this mode of development is entirely given up, and cells are described as multiplying by fission and endogenous growth only.

Leaving the general doctrine of cells, we now pass to the chapter on the structure of the lungs. In the review of Dr. Salter's work on asthma, inserted in our last number, we have spoken at some length of the function of the muscles of Reisseisen. The anatomy of these muscles of the bronchial tubes and the air vesicles, is thus described by Kölliker:—

"The *intimate structure* of the bronchi and air-cells is as follows —The *bronchi* are, in the main, constructed like the trachea and its branches; still some differences present themselves even from the commencement, and these increase more and more as the bronchia are traced onwards. Two coats may, for the sake of convenience, be distinguished upon them: an outer *fibrous coat*, partly possessing *cartilages*, and a *mucous coat*, in which is a *layer of smooth muscular fibres*. The outer coat, formed of connective tissue and elastic fibrils, is as thick on the first bronchia within the lung as in the two main

bronchi from which they spring. It becomes, however, gradually more and more attenuated, and is scarcely demonstrable with the knife on bronchi below  $\frac{1}{2}$ " in diameter. Traced onwards, this coat is found to coalesce eventually with the mucous membrane and the loose connective tissue, which connects the bronchi with the pulmonary parenchyma. In it are seated the cartilages of the bronchia, which, instead of semicircles, are here irregular angular plates, distributed over all parts of the circumference of the tube. These plates are at first large and closely disposed, but become further apart from each other where the bronchial tubes send off branches, becoming progressively smaller and smaller, till at length they disappear from bronchia below  $\frac{1}{2}$ " in diameter. This is certainly the rule; but *Gerlach* believes he has seen them upon bronchia  $\frac{1}{10}$ " in diameter. These cartilages are not unfrequently reddish, and their structure, at first, exactly resembles that of the tracheal rings; as the cartilages become smaller, the differences between the superficial and deeper cells disappear, and the tissue becomes alike throughout, and resembles the interior portion of the larger cartilages. The *muscular fibres* are observed in bronchia of all sizes, forming flat fasciculi, which completely encircle the tube, and form a perfectly unbroken layer; in very old people, however, spaces are found to exist between the fibres. These muscular fibres have been observed upon branches  $\frac{1}{10}$ "  $\frac{1}{12}$ " in diameter, and, therefore, probably occur even up to the pulmonary lobules.—Intimately connected with the muscular coat is the *mucous membrane*, which, at first, has the same thickness as in the trachea; but this, like the other component coats, gradually becomes attenuated, so that bronchia below half a line in diameter have altogether only a very thin wall. At its attached surface, this membrane is composed throughout of elastic longitudinal fibres, whose bundles give to the inner surface of the bronchi the characteristic longitudinally striped appearance, and also give rise to a longitudinal folding of the mucous membrane more or less distinct. Secondly, there is a homogeneous layer, 0.002" to 0.003" in thickness, on which is situated, thirdly, the *ciliated epithelium*. This epithelium in the larger bronchia, as far as those of 1" in diameter, is composed of several layers, but gradually becomes reduced to a single layer of ciliated cells. 0.006" in length. The bronchial tubes possess, at first, numerous racemose glands, which, however, disappear upon canals of 1" to  $1\frac{1}{2}$ " in diameter, although *Remak* says he has seen them in the walls of the finest bronchia just before they enter the ultimate lobules.

“*Pulmonary Vesicles*.—In these we may demonstrate the existence of two layers, the one fibrous, the other epithelial; and I am not prepared to admit that there are any other coats than these. The *fibrous* coat is obviously continued from the bronchia, and consists of the mucous membrane, which has become very thin and conjoined with the fibrous layer. This coat is completely destitute of smooth muscular fibres, and consists of a homogeneous stratum of connective tissue, together with elastic fibres and numerous vessels.

The *elastic fibres* (0.005''' to 0.002''') appear chiefly in the form of separate trabeculæ and stripes, coursing upon the borders of air-cells and around their openings; they anastomose in all directions with each other, and they form a firm frame work, between which the softer vascular parts of the alveoli are stretched. These elastic trabeculæ are generally composed of yellow fibres, arranged as closely as possible, the meshes of the network appearing only as very narrow fissures, so that it is difficult to recognise the nature of the tissue we are observing; but sometimes the fibres are more loosely connected, and then their elements are distinct. The trabeculæ meet and coalesce with each other around the pulmonary vesicles, so that the boundaries of the separate air-cells are rarely to be distinguished. A few elastic fibres of the finer kind also proceed from the trabeculæ into the remaining walls of the pulmonary vesicles, and become connected therein to form a wide network. The *connective tissue* of the air-cells, which appears perfectly homogeneous, gives place to the elastic elements and vessels, where these are in large quantity, and comes to view, so to speak, only in the walls of the alveoli, between the elastic trabeculæ, serving to connect the numerous capillaries."

Long before the microscope was re-introduced as a means of anatomical research, the late Professor Macartney, of this city, suggested, from a consideration of the difference between the phenomena of pneumonia and those of bronchitis, and also on account of the difficulty he saw in the expulsion of mucus from the air vesicles, that the membrane lining these vesicles resembled in its structure the serous membranes, rather than the mucous.

Since that period, Dr. Addison surmised from the difference in the phenomena of these two diseases, that the air-vesicles were destitute of epithelium altogether: and in a paper in the "*Medico-Chirurgical Transactions*," vol. xxxii., and in another in our contemporary, "*Brit. and For. Med. Chir. Review*," No. xxxii., strongly advocated the same view. On this point the investigations of Professor Kölliker prove the existence of an epithelium, but of a character so closely resembling that of the serous membranes, as to fully justify the speculation of Macartney—

"The *epithelium* of the pulmonary vesicles is an ordinary pavement-epithelium without cilia, which forms a single layer, and rests immediately on the fibrous coat. Its cells measure 0.005''' to 0.007''' in diameter, and 0.003''' to 0.004''' in thickness; they are pale, granular, and polygonal, in disease sometimes containing fat-granules. A regular desquamation of this epithelium has been stated to take place by some authors, but with as little evidence here as in the trachea and bronchi. It is true, that single cells of this epithelium may become mingled with the bronchial mucus, whether by accident

or by disease, and, after death, the epithelium of the air-cells in man is frequently found free inside the air-cells and in the finest bronchia; but the epithelium may be observed *in situ* in some alveoli in almost every human lung, while, in newly killed animals, there is not the slightest difficulty in observing this membrane in its normal position."

In describing the distribution of the blood-vessels in the lung, a fact is mentioned, on the authority of Virchow, which has an important bearing on the controversy that has for some time been waged between Dr. Heale and the anatomical world, as to the distribution of the bronchial arteries. Dr. Heale, it will be remembered, asserts that the blood carried to the lungs by the bronchial arteries is supplied exclusively to the parenchyma of the lung—that it is entirely returned by the bronchial veins—that no part of it is supplied to the mucous membrane of the tubes or air-cells; and that there is no communication whatever between the capillaries formed by the bronchial arteries, and those formed by the pulmonary arteries. The mucous membrane of the bronchial tubes Dr. Heale believes to be supplied by (as it were) recurrent branches from the pulmonary plexus of the air-vesicles; and the blood that has supplied the mucous membrane of the tubes, he describes as being returned by the pulmonary veins.

Dr. Waters, on the other hand, who entered the lists as champion for the anatomical world, asserts that the bronchial arteries are distributed to the parenchyma of the lungs, and that they also supply the mucous membrane of the tubes as far as the air-vesicles, and that their blood is poured into the pulmonary veins, causing these vessels to return to the heart a mixed fluid, formed of the arterialised blood, derived from the capillaries of the pulmonary artery, and a venous blood, derived from the capillaries of the bronchial artery. The bronchial veins, Dr. Waters asserts, do not pass into the substance of the lungs at all, being found only at the roots of these organs. It is obvious that, if the bronchial arteries are capable of supplying the place of the pulmonary arteries, when these are obstructed, and become enlarged for that purpose, there must be a free communication between the two systems of vessels, though it may be quite true that the mucous membrane of the bronchial tubes is chiefly supplied by the pulmonary vessels, which is disputed by Dr. Waters, and we think on good grounds.

"It is worthy of observation, that in addition to the air-vesicles, some other parts in the lungs are supplied by the pulmonary vessels, viz., the *surface of the lung* and the *finer bronchia*. With regard to the former, there are seen at different places, upon an uninjected



lung, small branches of the pulmonary artery passing to the surface of the lung, and ramifying beneath the pleura. *Reisseisen* (p. 17) describes these vessels, and gives very beautiful drawings of them (tab. iv. v.); and recently *Adriani* has followed them in injected lungs, and states that they describe a tortuous course and frequently anastomose, being here considerably thicker, and forming wider networks than the vessels of the alveoli. The blood of these networks is drawn off by superficial roots of the pulmonary veins on the one hand, and on the other hand, by anastomoses with the expansion of the bronchial vessels on the pulmonary pleura. That the pulmonary arteries also supply the bronchia in part, had been already mentioned by *Arnold* (*Anat.* ii. 171); and we are indebted to *Adriani* for more particular information on this interesting subject. According to him, the pulmonary arteries and the pulmonary veins are the vessels chiefly concerned in the formation of the capillary network on the surface of the bronchia. This plexus is distinguished by the elongated form of its meshes, while its vessels are almost as narrow as on the air-cells, measuring in man 0.004" to 0.006" in diameter. The bronchial vessels in this situation appear to supply more especially the muscular and fibrous coats of these canals. As may be easily understood, the two systems of vessels have here a certain connection between each other, and, accordingly, the older anatomists, as *Haller*, *Sömmering*, and *Reisseisen*, are quite right when they speak of a connection between the two systems of vessels. According to *Adriani* and *Rossignol*, the bronchial arteries and veins can be injected from the pulmonary veins, and, *vice versa*, the pulmonary veins from the bronchial arteries, although the bronchial vessels cannot be injected from the pulmonary arteries.

"Supported by these facts, we are justified in ascribing to the finest bronchia a share in the process of exchange of gases in respiration, although, on account of the somewhat greater thickness of the epithelium, and the somewhat wider capillary network of the fine air-tubes, their share must be inferior to that of the pulmonary vesicles. We may also make mention here of the enlargement of the bronchial arteries, and of the extension of their region of distribution in cases of disturbance of the circulation in the pulmonary arteries (compare *VIRCHOW*, in his *Archiv.*, iii. 3. p. 456). Here the bronchial arteries frequently replace whole branches of the pulmonary arteries, and become actual respiratory vessels; conditions which are readily explained by the occurrence of numerous normal anastomoses between the two systems of vessels. Very recently, *Beau* has maintained that the pulmonary arteries supply the mucous membranes of all the bronchial tubes, even up to the trachea."

Still dipping almost at random, we open now at the section on muscular tissue. The paper in which Mr. Bowman first described the structure of the striated muscles was so complete and so accurate, that it left very little for subsequent writers to dilate upon. On two points controversy has arisen: on the

first of these, viz., whether fibrils exist during life, or whether they are merely the separation of the fibres into longitudinal columns of sarcous elements, instead of into discs, or transverse segments, the tendency to separate in both directions being nearly equal, Kölliker argues for the existence of the fibrils during life; but the other, raised by Dr. Carpenter, as to the cellular nature of the sarcous elements, is not touched on at all.

“Various controversial opinions still prevail, as regards the composition of the muscular fibres. Several authors, above all, *Bowman*, are of opinion, or at least consider it as probable, that the fibrils are artificial products. According to the last-named author, a breaking up of the muscular fibres into *discs* (fig. 65) is quite as natural, although not quite so frequent, as that into fibrils; and they may with equal justice be held to be columns of discs, as bundles of fibrils. Were a muscular fibre broken up in the direction of both the transverse and longitudinal striæ, small, roundish-angular particles would be produced, which might be designated primitive particles, or *sarcous elements*. In the muscular fibre, these elementary particles are united in the transverse, as well as the longitudinal direction and form, in the one case a disc, in the other, a section or joint of the fibrillæ. The breaking up into discs could, in my opinion, be considered of importance only if it occurred as frequently as that of fibrils, and also took place occasionally in fresh muscles. But nothing of the sort is to be seen in the fresh muscles of man and the higher animals. It is rare, even, in macerated fasciculi; while, on the other hand, the fibrils can be isolated in almost every muscle, by any one moderately conversant with the matter.

“In *transverse sections of fresh-dried or fresh muscles of the frog*, the transverse sections of the fibrillæ can be distinctly seen, which fact refutes all those opinions according to which the muscular fibres, during life, consist of a homogeneous solid or fluid substance. Moreover, it may be remarked, that the assumed elementary particles can only be isolated with difficulty, except in macerated muscles, where their separation is undoubtedly easy; and also, that in the perfectly fresh muscles of certain insects (*coleoptera neuroptera, hymenoptera, lepidoptera, diptera, orthoptera* in part, *hemiptera* in part), the individual fibrils can be very beautifully separated. Considering the great similarity between the muscles of insects and those of the higher animals, in all other essential points, the above fact appears to me to be very striking. I am, therefore, for this and the other reasons assigned, fully convinced of the existence of fibrils during life, and believe that, in man and many animals where they cannot be so easily isolated, they are held together by an intermediate substance, and, in fact, so firmly, that, under certain circumstances, fissures may take place across the fibres, *i. e.*, in the direction of the thinner parts of the fibrils.

“I consider the sarcous elements as artificial products, occasioned by the breaking up of the fibrils at the parts where they are thin-

ner, which naturally takes place much easier there than elsewhere. I refrain from giving an opinion as to the nature of these particles, as I hold that our microscopes do not afford adequate data for forming a sure judgment respecting elements of such fineness."

With one more extract on the pathological condition of muscles, we must close these desultory notes on this most valuable work, the study of which is indispensable to all who desire an accurate knowledge of the intimate structure of the body:—

"With respect to the *pathological* conditions of muscles, the following remarks occur. The substance of the transversely striped muscles is not regenerated, and when divided by a wound, it heals simply by means of a tendinous cicatrix. A new formation of muscular tissue has been seen by *Rokitansky* in a tumour of the testicle of an individual eighteen years old, and by *Virchow* in an ovarian tumour. In the latter case, which I had an opportunity of observing, the new tissue consisted of long, transversely striped, fusiform cells, each with a nucleus. In hypertrophy of the muscles, which never, or, at least, most rarely, occurs in transversely striped muscles, with the exception of the tongue, heart, and certain respiratory organs (*Bardeliben*), the elements, according to *Hepp* and *Wedl*, appear simply to increase in thickness; and, according to the former, the hypertrophied fasciculi in the heart are four times larger than the normal. A true atrophy takes place in old age. The fibres are then narrow, some only 0.004" to 0.008" in diameter, friable, and, for the most part, without transverse striæ, and with indistinct fibrils. They often contain a large number of yellowish or brown granules, and numerous vesicular nuclei with nucleoli, which are often arranged in linear series, or collected in heaps upon the inner side of the sarcolemma; and, singularly enough, exhibit the same indications of an energetic multiplication by endogenous formation, as in the embryo. Besides these, many other pathological processes accompany atrophy of the muscles. In the *formation of fat in the muscles*, which often occurs in the heart, the muscular fibres are gradually displaced by connective tissue and fat-cells developed between them; whilst in their *fatty degeneration*, the fibrils gradually disappear, fat-granules being developed in their place, for the most part in linear series; or even fat-cells are formed within the sarcolemma. At the same time, the muscles become softer, paler, and more yellowish, and the fibres readily break down. Paralysed muscles were found by *Reid* to be thinner, softer and paler, and by *Valentin*, to have indistinct transverse striæ. More recent observers have found in such muscles, for the most part, atrophy with fatty degeneration.

"In *emaciated* individuals, the muscles are pale and soft, and the fasciculi small. The muscular fibres sometimes, though rarely, become calcified, so that the muscles split up like asbestos. Ossifica-

tion of a muscle, as sometimes happens in the deltoid, from pressure of the musket in military exercise (the so-called *Exercirknochen*), arises in the connective tissue, which may also occasion a fibrous metamorphosis of the muscle by its undue increase. In *cancer* of the *pectoralis major*, I found the sarcolemma filled with beautiful rows of pale nucleated cells. Of *parasites*, may be mentioned the *Cysticercus cellulosæ*, which lies between the fasciculi, and *Trichina spiralis*; further, a nematoid worm, which BOWMAN (*Cyclop. of Anat.*, ii., p. 512) saw living in the almost empty sarcolemma of the muscles of the eel. Organic formations—but whether of vegetable or animal nature, is uncertain—are found in rats and mice, as white streaks of 4" to 7" long, and 0.009" to 0.1" broad, and, on microscopical investigation, seem to be *hollow primitive fasciculi* filled with elliptical, slightly curved corpuscles of 0.004" to 0.005" long, and 0.0019" broad, resembling eggs."

*Het Leven en het Maaksel der Dieren.* Door W. VROLIK, Hoogleraar te Amsterdam; Secretaris der Koninklijke Akademie van Wetenschappen. Amsterdam: M. H. Binger en Zonen. Eerste Deel, 1853, pp. 375; Tweede Deel, 1854, pp. 494; Derde Deel, Gebroeders Binger, 1860. pp. 471.

*The Mode of Life and Organization of Animals.* By W. VROLIK, Professor at Amsterdam; Secretary to the Royal Academy of Sciences. Amsterdam: Binger, Brothers. 1853-1860. In three volumes. pp. 1340.

IN the great work on Natural History just completed, for the present at least, by the learned secretary of the Royal Academy of Sciences at Amsterdam, we are presented with a very full and interesting description of the form, organization, and mode of life of the vertebrate classes of animals. We are glad to perceive that the author holds out a hope that at some future period, if life and health be spared to him, he may render his volumes still more perfect, by the addition of a fourth part, on the invertebrate classes. The work is at present divided into thirty-four chapters; and, at the end of the third volume, a copious index to the whole is given.

In the first chapter the author reviews the life of animals, as manifesting an immaterial principle in Nature. The second and third chapters are, also, more or less introductory. The fourth is devoted to the subject of classification; and the fifth, to a general review of vertebrate animals. In the sixth, the author commences, with the *Quadrupana*, his detailed descrip-



tions of the several classes; and terminates them, in the thirty-fourth, with a general view of the structure of fishes.

The anatomical portions of the work, as being less within the reach of all, are printed in smaller type, and contain more of the author's original observations than the parts belonging more properly to the subject of natural history.

In the present notice, we can do little more than point out the general arrangement of this great work, which must henceforward be of standard authority on the subjects of which it treats, and express our satisfaction that it is so far completed. The more strictly scientific character of the work is relieved by the number of apposite quotations from classical writers in various languages, from time to time introduced by the author; and those which he brings forward from our own poets prove him to be well acquainted with English literature. We shall, in conclusion, adduce a note appended to p. 97 of the third volume, partly because it refers to the labours of the late distinguished Curator of the Museum of the Irish College of Surgeons, and partly because it exhibits the total absence of rivalry in the true lover of science. Speaking of his own paper on the tongue of the chameleon, published at Amsterdam in 1827, Professor Vrolik says:—"A year later appeared the observations of Houston 'On the Structure and Mechanism of the Tongue of the Chameleon,' in the 'Transactions of the Royal Irish Academy,' vol. xv., p. 177. Dublin: 1828. They agree in the main with mine, with which, however, the writer seems not to have been acquainted. Two years afterwards appeared the treatise of Duvernoy on the same subject. He was not aware of the labours of either of his predecessors, but agrees in great part with them. See Duvernoy: 'De la Langue, considérée comme organe de la préhension des aliments,' in 'Mémoires de la Société d'Histoire Naturelle de Strasbourg,' tome i. Paris: 1830. I need not say that this note is not put forward as a claim of priority, but to indicate an agreement, manifesting itself in three places remote from one another, and certainly admirably calculated to remove former erroneous ideas on the subject."

It would be injustice to the publishers not to allude to the very beautiful manner in which Professor Vrolik's volumes have been brought out. The style of the book is extremely creditable to the Amsterdam house from which it has issued.

*Further Researches on the Gray Substance of the Spinal Cord.*

By J. LOCKHART CLARKE, Esq., F. R. S. Reprinted from the Philosophical Transactions. Part I. 1859. 4to. pp. 30. 7 Plates.

MR. CLARKE is a laborious and patient investigator into the structure of the nerve-centres. He has discovered methods for rendering sections of nerve-tissues sufficiently transparent to admit of their being examined in the microscope, even when so thick as the one-twelfth of an inch, and he has applied himself, by means of these, to the tracing of the minute anatomy of the spinal cord and medulla oblongata.

We very recently gave our readers some account of his paper on the "Medulla Oblongata;" we have now to bring under their notice a paper on the "Spinal Cord," being the third on this subject communicated by him to the Royal Society. We do not attempt to criticise; our business is simply to notify the progress that has been made. Indeed, Mr. Clarke confines himself so absolutely to the statements of the facts he has discovered, and to the descriptions of the appearances presented by the sections he has made, that criticism is out of the question; we have simply to accept what is presented to us. Hereafter, no doubt, the materials now being brought forth, prepared, and arranged, will be utilized; facts now discovered will lead to the discovery of others, as, indeed, many of Mr. Clarke's have already done; and when our knowledge of the structures is complete, the explanation of the uses of the parts will not be difficult.

The first of Mr. Clarke's papers on the "Spinal Cord" was published in the Philosophical Transactions for 1851, and was the result, he tells us, of two years' labour. In it he gives an account of two considerable columns of caudate vesicles that he discovered extending along the whole length of the spinal cord commencing small at its lower extremity, increasing in size in the lumbar and cervical enlargement, and terminating at the upper part of the medulla oblongata. These columns, which he proposes to name the "*posterior vesicular columns*," have the posterior roots of the spinal nerves in intimate connexion with them. They are situated at the inner side of each of the posterior cornua of the gray substance, immediately behind the posterior commissure. In this paper, also, the spinal accessory nerve is described as arising from a column of gray substance at the side of the cord; and, among other things, it is shown that the number of the caudate vesicles in the several parts of the cord is in direct proportion to the number

of nerves arising at each part, and that the nerve-fibres found in the gray substance are tubular, and not solid, as had been asserted. The second paper, published in the volume of the Transactions for 1853, is chiefly devoted to the description of the roots of the nerves. In concluding this paper, he allowed himself to be betrayed into the following very incautious and unphilosophical assertion:—

“In concluding this series of investigations, it has appeared to me that, considering the beauty and transparency of my preparations, the distinctness with which their several parts have been preserved, and the persevering labour which has been bestowed upon them, I might almost venture to think we have obtained nearly all that it is possible to know—with our present means—concerning the minute anatomy of the spinal cord.”

The folly of this finality assertion did not long remain undemonstrated, as not two years elapsed until Professor Schröder van der Kolk published his memoir on the “Spinal Cord,” the translation of which, by the new Sydenham Society, we lately reviewed at some length, and in which our knowledge of the very point discussed in this paper is carried considerably farther than where Mr. Clarke left it,—the roots of the nerves being traced into their connexion with the multipolar vesicles of the gray substance, a point not attained by Mr. Clarke.

The present paper gives an account of further researches on the gray substance of the spinal cord, more particularly on the posterior cornua. It is well known that Rolando described the apices of these cornua as differing in appearance from the remainder of the gray substance of the chord, and named the part forming them the “*Substantia Gelatinosa*.” Mr. Clarke is not quite satisfied with this description, and thinks it would be advantageous and convenient to describe the posterior cornua as consisting of two parts: 1. The *caput cornu*, comprising the substantia gelatinosa, and an opaque layer immediately in front of it; 2. The *cervix cornu*, connecting the caput with the central portion of the gray substance and the posterior commissure.

“This distinction is grounded on the facts,—1, that in ascending the *medulla oblongata*, the part which I designate the *caput cornu* is thrown aside from the rest, as a distinct mass which is traversed in succession by the vagus and glossopharyngeal nerves, and then becomes the principal nucleus of the sensory root of the trifacial; and 2, that, independently of the *gelatinous substance* which surrounds it, it differs in structure from the *cervix*, or remaining part of the cornu, which, in the *medulla oblongata*, supplies the gray substance of the *posterior pyramid* and *restiform body*. This distinction it not

only consistent with anatomical facts, but will be the means, I think, of adding clearness and precision to the description of these parts."

The minute structure of these parts is very carefully described, especially the structure and relations of the posterior vesicular columns, which occupy the inner part of each cervix; and another column of vesicular matter is described as occupying the outer part of the cervix, which Mr. Clarke names the "*tractus intermedio-lateralis*." Considerable pains is taken to trace these several tracts as continuous columns; but, it is evident from the description, that, in the lumbar and cervical enlargements, where the vesicular matter is most abundant, the appearance of distinct columns is lost; and it is only in the parts where the fewest nerves arise, as in the dorsal region, and where the vesicular matter is least developed, that the columnar appearance is at all distinct. And we would ask, is not this desire to trace columns a remnant of the old teachings, which referred all the functions of the spinal cord to the several columns of the white matter? We believe that muscles which are associated in action are supplied by nerves arising from special groups of multipolar cells; but we doubt very much if there really be distinct columns of gray matter. The following extract affords an interesting example of the grouping of the cells for special purposes.

"It has also been seen that the cells of the *tractus intermedio-lateralis* are elongated with their processes in a longitudinal direction, and reached by both the *posterior* and *anterior roots* of the spinal nerves, and perhaps by the *spinal-accessory*; that the latter nerve extends *forwards* to the cells of the *anterior cornu*, which also send some of their processes *longitudinally*, and are reached by the *posterior roots*. Moreover, I have in another memoir shown that, while *one* portion of the *upper roots* of the *spinal-accessory* nerve and *one* portion of the *vagus roots* proceed *inwards* to their respective nuclei behind the canal, other portions of both bend forwards to the vesicular network into which the *anterior cornu* has become resolved. Again, I have shown, in the same memoir, that some of the roots of the *trifacial nerve* descend *longitudinally* through the *caput cornu*, between the transverse roots of the *vagus*; in which course they are probably brought into connexion with the *respiratory centres*, and perhaps also, like the *vagus*, with the anterior gray substance of the medulla. These extensive and intimate connexions seem to afford an explanation of the mechanism by which impressions made on the *vagus* and on the incident fibres of the trifacial and spinal nerves may call into action the whole class of respiratory muscles; and if the tract which I have just described in the upper part of the cervical region be continuous, as it probably is, with the *tractus intermedio-lateralis*, which is reached by the dorsal nerves supplying the intercostal and respira-



tory muscles of the trunk, the explanation in question will be still more complete."

In the conclusion of this paper, van der Kolk's account of the connexion of the roots of the nerves with the processes of the multipolar cells, of which the author had not been able to satisfy himself at the period of his former papers, is admitted and confirmed; and, in an appendix, an account is given of some improvements that have been effected in the mode of preparing nerve tissues for microscopic examination.

*Mikroskopische Onderzoekingen over de Ontaarding van Aderen en Zenuwen in Kanker*, Door F. R. WESTHOFF. Proefschrift ter Verkrijging van den Graad van Doctor in de Geneeskunde aan de Hoogeschool te Utrecht. Utrecht, P. W. van de Weijer. 1860. 8vo. pp. 68. with a plate.

*Microscopic Investigations on the Degeneration of Veins and Nerves in Cancer*. By F. R. WESTHOFF. A Thesis for the Degree of Doctor of Medicine in the University of Utrecht.

It was in the year 1826, that Professor Schroeder van der Kolk, in examining an injected fibrous tumour, found that the new formation presented only minute capillary arteries; of veins, communicating with those of the surrounding parts, there appeared to be none.

This peculiarity was subsequently observed by him in other similar tumours, as well as in those of a carcinomatous nature. Many other and good investigators, and among these Berard, made the same observation, partly independently of van der Kolk, partly in consequence of having their attention directed by him to the subject, as Rokitansky, Virchow, and others. To many others these views seem to have been unknown, or their truth has been directly denied by them, as most recently by Gerlach. The writer of the essay before us—having quoted several original authorities upon the point in question, and having described several specimens of fibrous and carcinomatous tumours, illustrative of it, to be found in the anatomico-pathological museum of Professor van der Kolk—proceeds, in the fourth section of his first chapter, to consider the changes of the nerves in carcinoma. We pass over his description of five specimens from the same museum, from the examination of which he infers that "in fungus medullaris the nerves are readily

attacked, and may even be completely corroded ; and that the veins, in carcinoma, are affected as well as the nerves."

In his second chapter, Dr. Westhoff relates the case of carcinoma of the stomach which gave rise to his dissertation, and proposes to trace and to describe the causes of the changes under consideration. On submitting, after death, a small portion of the carcinoma to a 450-magnifying power, cells such as occur in cancer, of different sizes, with nuclei, nuclear corpuscles, and granular matter, as well as distinct parent and young cells, were observed. The chief object, however, was to examine the condition of the vessels, why absolutely no veins occur in carcinoma. A portion of the mucous membrane of the great curvature was taken, where here and there blue injected vessels were still visible, showing, under the microscope, the capillaries running very beautifully ; suddenly, however, the blue colour disappeared, and the subsequent portion of the capillary vessel was filled with granular matter, nuclei, and cells. "Cruveilhier," adds the author, "when he speaks of the explanation of the fact, observed by Bérard, that only arterial capillaries are found in carcinoma, appears to have suspected this condition ; for he says : 'L'objection tirée de l'injection me parut un argument en faveur de l'opinion que je soutiens, car comment l'injection pourrait elle pénétrer dans les veines malades et pleines de matière cancéreuse, les artères étant dans leur état d'intégrité ont du être perméables à l'injection'. But he has not established this by microscopic investigation : what he thus suspected and supposed, has been demonstrated in the present case."

We have quoted sufficient to indicate the leading points dwelt on by Dr. Westhoff, in his academic thesis. This subject is admirably illustrated by a lithographic plate, coloured sufficiently to show the abrupt termination of the blue injection, and containing eight figures, after a drawing, as we are informed in the preface, by the writer's distinguished "Promotor," Professor J. L. C. Schroeder van der Kolk.

*The Management of Infancy, Physiological and Moral. Intended chiefly for the Use of Parents.* By ANDREW COMBE, M. D., &c. Ninth Edition. Revised and Edited by SIR JAMES CLARK, Bart, M. D. Edinburgh: Maclachlan and Stewart. 1860. 12mo, pp. 302.

THE fact of a book having arrived at the mature age of nine editions, may be considered as affording ample grounds for the

presumption that the objects contemplated by its author have met with a fair degree of appreciation at the hands of the class of readers for whom the work was originally designed. The first edition of Dr. Combe's treatise appeared about twenty years ago, and was designed to supply what the author had the sagacity to perceive was a serious desideratum, namely, a code of plain and rational instructions on the "management of infancy," using this term in its widest and most comprehensive application. For although, previous to the period to which we have referred, several excellent treatises had appeared, yet the information thereby supplied was, in some instances, adapted exclusively to the requirements of professional readers, while in others it consisted of rules and directions addressed expressly to mothers, but conveyed in the form of so many abstract dogmata, without enunciating the principles on which such rules were founded. The author of the present work rightly conceived that the usefulness of a book of the latter kind would be much enhanced were it to present the several practical directions, not as the crude expression of mere opinions, but as legitimate deductions from certain physiological principles, a general outline of which should be laid before the reader, as the most rational means of enforcing the inculcations of which they form the basis. Dr. Combe was strongly impressed with the conviction that the general principles of physiology, especially in its relation to the human constitution in the earlier period of its existence, should constitute an essential part of the education of females. His views on this subject are so forcibly conveyed in the following passage, that we offer no apology for transcribing it:—

"In no point of view," he writes, "is it possible to defend the prevailing error, of leaving out what ought to constitute an essential part of female education. Till this defect be remedied, thousands of young beings, who might have been preserved, will continue to be cut off at the very outset of existence, to the lasting grief of those who would have been happy to guard them against every danger, had they only known how. Even in the best regulated families, it is rare to meet with a mother who, before becoming such, has devoted the least attention to the study of the infant constitution, to the principles on which it ought to be treated, or to the laws by which its principal functions are regulated. She enters on her important charge with less preparation than if it were a plant or a flower, instead of a being in whose existence her whole soul is centred. Yet to her exclusively the infant looks for that cherishing and affectionate care which its delicate frame requires; to her it directs every appeal, in the full confidence that she will be ever watchful for its happiness and relief, and that from her a look or a cry will procure

the requisite sympathy or aid. She it is who provides its nourishment, regulates its exercise, and watches over its slumbers. But when we inquire to what extent her education has fitted her for the intelligent discharge of the duties which thus constitute the chief objects of her social existence, we find that in the majority of instances, on no one point relating to them has she received even a tittle of instruction, and that she marries and becomes a mother without a suspicion of her deficiency in the most ordinary information concerning the nature and functions of the infant whom she is suddenly called upon to cherish and bring up. When her heart is wrung by witnessing its sufferings, and she knows not to what hand to turn to save it from impending danger, she bitterly laments her ignorance and helplessness. But not being aware that much of the difficulty and danger proceeds from her defective education, the idea never occurs to her that those who come after her must, in their turn, go through the same painful and profitless experience with *their* children, unless, with rational foresight, they be prepared by the requisite training for those duties which they may soon be called on to perform.

“It is true that all women are not destined to become mothers; but how very small is the proportion of those who are unconnected by family ties, friendship, or sympathy with the children of others! how very few are there who, at some period of their lives, would not find their usefulness and happiness increased by the possession of a kind of knowledge so intimately allied to their best feelings and affections!

“It may indeed be alleged that mothers require no knowledge of the laws of the infant constitution, or of the principles of infant management, because *medical aid* is always at hand to correct their errors. According to the present habits of society, however, professional men are rarely consulted till the evil is done, and the health broken; but even if they were, intelligence and information are needed in the mother, to enable her to fulfil their instructions in a rational and beneficial spirit. On every account, therefore, it is urgently necessary that female education should be such as to fit both mind and body for the duties as well as for the embellishments of life,—for the substantial happiness of the domestic circle, at least as much as for the light and fleeting hours of fashionable amusement,—and that, while every effort is made to refine and elevate the mind, the solid substratum of useful knowledge should not be neglected.”

It is not improbable that the opinions expressed in the foregoing passage may, to some minds, appear to savour of the fanciful, and to have resulted more from imagination than experience; while haply there are some who maintain that the public in the present day are becoming rather too well informed in respect of matters relating to medicine; and that the ten-



dency of works like the present is by no means beneficial, but rather conduces to favour a belief in the possibility and propriety of placing mothers and nurses in a state to dispense with the services of the medical practitioner altogether in too many instances. The author, indeed, would appear to have anticipated some such objection in the present case, for, in speaking of those treatises which preceded his own, he considers that few of them were calculated to supply parents with the *kind* of information which, in their circumstances, is especially needed.

“Most of those hitherto published,” he says, “touch briefly upon the general management of early childhood, merely as preliminary to an exposition of its diseases; and the perusal of them by non-professional persons frequently leads to dangerous tampering with the lives of the young. On this account, I cannot but consider them as improper guides for any except medical readers.”

Physicians who have had much experience in the treatment of infantile disease will, doubtless, concur in entertaining the conviction so unhesitatingly expressed in another part of this work, namely, that a child cannot encounter many greater dangers than that of being subjected to the vigorous discipline of a medicine-giving mother or nurse; and that wherever a mother of a family is observed to be ready with doses of calomel, cordials, anodynes, and other active drugs, the likelihood is that one-half of her children will be found to have passed to a better world. But, when it is admitted that the duty of administering drugs, or rather the province of prescribing them, belongs not to the mother or the nurse, the young practitioner will very soon learn that, upon the skill with which the general management, both before and during illness, is conducted, —a skill to which it should be the anxious endeavour of every mother to attain,—will much of his success in the treatment of many infantile diseases depend. And is not every practical man fully sensible of the disadvantage under which he is liable to be placed in endeavouring to make an accurate diagnosis of an obscure case, when, on his inquiring into the previous history of the little patient, whom, perhaps, he has never seen before, he finds himself unable to elicit from the ignorant and thoughtless, or the stupid and ill-informed attendant, a single reply which will be of the least use in enabling him to resolve a difficulty? —for *there are* difficulties to be met with now and then in infantile medicine, which are not to be removed at the first glance, and without very careful and prudent inquiries on the part of the practitioner. That these inquiries, then, should fail to be

understood by the attendant, will be embarrassing enough, but should their object, or the motive which suggested them, happen to be misinterpreted, a serious disparagement of his professional character may be the result.

The first chapter of the work before us is devoted to an inquiry into the causes upon which depend the remarkable differences universally observed to exist among the children of different families, as regards the probability of their attaining to adult growth; some of them being cut off one after another, by tubercular or other form of disease, whilst others, although placed, apparently, in circumstances comparatively unfavourable, grow and thrive as if they quite ignored the existence of disease in any shape. In this chapter the important question of hereditary influence, in its sundry phases, is fully and fairly stated, with a view of elucidating the social bearings of the case.

The state of health, mind, and general conduct of the mother, during pregnancy, and their influence upon the health of the future infant, constitute the subject-matter of the second chapter; while in the third, which is headed, "Great Mortality in Infancy, produced by removable Causes, and increased by Parental Ignorance," the author has brought together a large collection of statistical and other facts, from which he argues that, although the rate of infantile mortality is decidedly excessive in amount, it is, nevertheless, capable of being greatly reduced by careful and judicious management. Perhaps one of the most remarkable examples of the beneficial effects of *sanitary*, as opposed to *sanative*, measures which could have been adduced, is the well-known instance of the almost complete check to the occurrence of trismus among the infants in the Dublin Lying-in Hospital, which was effected through the adoption of the means suggested by the late Dr. Clarke for insuring an increased amount of ventilation in the wards. In the year 1782 nineteen-twentieths of the infantile deaths were caused by trismus, whereas, at present, not more than one or two cases of death from this cause are to be observed annually in that institution.

The chapters next succeeding are occupied with the consideration of the general conditions by which infant health is influenced,—conditions operating indirectly through the medium of the parents, and directly on the infant after it has assumed an independent existence. To this is added a popular outline of the peculiarities of the infant organism, as preliminary to entering upon the practical rules for the management of the different stages of infantile life. These necessarily

embrace a great variety of topics, upon which we shall not now dwell further, than to observe that the physiological principles upon which their application rests are made as plain and intelligible as could be desired.

But, in spite of the best-directed measures of precaution, illness will enter the nursery, and one or more children of the family may be affected. Let us turn to chapter XIII., under the head of "Management during Illness." Here we find the author disclaiming all intention of entering on the consideration of *medical* treatment, "because that ought never to be conducted by the parent or nurse. I refer to it," he says, "merely to add, that the previous good or bad management of the child has an important influence on the progress and result of all infantile diseases." And further on, in the same chapter, after he has given some good illustrations of the evil results of delaying to send for professional advice, and of waiting until some domestic remedy be had recourse to, in the hope of effecting a cure, he urges upon parents the duty of placing the responsibility at once upon the proper shoulders, whenever a child complains without any obvious removable cause. There is much sound sense in following passage:—

"One or two other points I would earnestly impress upon mothers. The first is, when a child is really ill, to send for the physician *as early in the day as possible*, instead of waiting, as is often done through a spirit of procrastination, till the darkness and solitude of night work upon the mother's fears, and then sending in great haste at a very late hour, when the difficulty of procuring the needful remedies is greatly increased, and the whole household is thrown into commotion. Timeously warned, the physician would make his visit at a seasonable hour, not only with more benefit to the patient, but at far less expense of time, trouble, and anxiety to all concerned; whereas, at night he is probably exhausted by the labours of the day, and of course less fit for active usefulness. In cases of acute disease, above all, this rule should be scrupulously followed. To prevent mistakes from the bad memory of servants, or from the physician's having more than one patient of the same name, a *written note* should invariably be sent, and the *address* be given. It should state also the *supposed seat and nature of the ailment*; for this information will enable him, as he goes along, to reflect on the constitutional peculiarities of the patient and the probable influence of prevailing epidemics, and to consider the precautions which a knowledge of these may suggest in directing the treatment. This is especially of importance when he is sent for in the night, because, from having some previous notion of the case, he may carry remedies with him and give relief on the spot. But in all cases it is useful, by preparing the mind of the adviser in some degree for the investigation of the disease."

The remainder of the work, from chapter xiv. to the end, is occupied with the subject of the mental and moral education of children, and the principles by which the guardians of infancy should be guided in conducting education in accordance with the progressive development of the mental faculties, and their natural aptitude for comprehending different subjects of study.

“Until these principles,” writes the editor, “so lucidly expounded by Dr. Combe, are thoroughly understood and systematically acted on in the management of infant schools, these very important institutions will never realise the advantages expected of them,—and which, if rightly conducted, they could not fail to yield, by training and instructing the young so as to modify their whole character, and thus promote their welfare, their usefulness, and their happiness through life.”

The interest which is at length becoming generally felt in the study of hygiene, especially in infancy and youth, makes it incumbent on young practitioners to acquaint themselves with its doctrines and their practical applications, as soon as possible, on entering into professional life. We have, therefore, no hesitation in recommending this work to their careful and attentive study, as one that may be safely and advantageously referred to on many occasions.

*Archiv für Klinische Chirurgie.* Herausgegeben von Dr. B. LANGENBECK, Geh. Medicinal-Rath, und Professor der Chirurgie; Director des Chirurgisch-Ophthalmologischen Klinikums der Universität; &c., &c. Redigirt von Dr. Billroth, Prof. der Chirurgie in Zürich, und Dr. Gurlt, Docent der Chirurgie in Berlin. Erster Band, erstes Heft, mit 4 Tafeln Abbildungen. Berlin. 1860. Verlag von August Hirschwald.

*Archives of Clinical Surgery.* Conducted by Dr. B. LANGENBECK, Medical Privy Councillor, and Professor of Surgery; Director of the Chirurgico-Ophthalmological Clinique in the University; &c., &c. Edited by Dr. Billroth, Professor of Surgery in Zurich, and Dr. Gurlt, Lecturer on Surgery in Berlin. First volume, first number, with 4 Plates. Berlin. 1860. Published by August Hirschwald.

WITH great pleasure we hail the appearance of a journal, at present we believe the only one of the kind in existence, devoted solely to the extensive subject of clinical surgery. The



volume just brought out—a goodly octavo of 273 pages, illustrated with four very beautifully-executed lithographic plates—is just what we should expect to see produced under the guidance of the three Professors, all of whom are so well known to science, under whose auspices it has been announced. The papers are varied and interesting, and embrace several of the most important topics in clinical surgery. The work is printed on good paper, and in a remarkably clear and distinct Roman type. We wish our new contemporary every success.

The journal opens with a very important communication by Dr. Langenbeck himself, on the injuries of the veins, and on tumours of the sheaths of vessels, and their extirpation. This paper, which would appear to be the first of a series of contributions to the surgical pathology of the veins, runs to the length of eighty pages. The author treats first of the exposure and contusion of large veins, and of the dangers of thrombosis; illustrating the subject with six cases. He next passes to venous hemorrhages, and the means of arresting them. The last twenty-eight pages of the paper are devoted to the subject of tumours of the sheaths of vessels, and their extirpation.

We have next a valuable chirurgico-pathological essay on “Fibroid and Sarcomatous Tumours,” by Dr. Hugo Senftleben, illustrated with drawings from nature by the author himself; and we are glad to see that our pages (“*Dublin Quarterly Journal*,” vol xx., 1855, pp. 493) have been the means of bringing under the writer’s notice two interesting cases originally published by Professor Santesson, of Stockholm, in the “*Hygiea*.”

Dr. C. Fock contributes an able paper upon “*Resection in the Hip-joint*,” containing six original cases, and exhibiting a tabular view of all the instances (90 in number), in which the operation of excision of the head of the femur has, to the author’s knowledge, been performed. Of these 90 cases, 46 occurred in England, 34 in Germany, 7 in America, 2 in France, and 1 in Belgium. About 70 of them are subsequent to the date (1849) of Professor Santesson’s valuable treatise on the hip-joint—which, we may observe, *en passant*, is not referred to by the author—fully reviewed in our eleventh volume, where (p. 432, *et seq.*) we entered at some length into the consideration of the operation.

The above-mentioned three papers constitute the great bulk of the first number of the “*Archives of Clinical Surgery* :” those by Dr. Danzel on the “*Operation for Hare-lip* ;” by the same, on “*Osteotomy of the Tubular Bones* ;” by Dr. Wetzlar, “*On some Cases of Ozæna cured with Creosote* ;” by Dr.

Billroth, "On some Deformities of the Foot caused by Defects in the Bones;" and by Dr. H. Weyrich, "On a Case of Urinary Calculi external to the Urinary Passages;"—are much shorter; but all are of great practical value.

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*On Diseases of the Prostate Gland.* By JAMES STANNUS HUGHES, M. D., F. R. C. S. I. Dublin. Fannin and Co., 1860. 12mo, pp. 63.

FEW diseases give rise to more serious distress, are attended with graver consequences, or of late years have been more closely studied, than those of that portion of our economy called the prostate gland, and of some of which we have in the work before us an admirable description. We say advisedly, "of that portion of our economy called the prostate *gland*;" for from its first discovery until very recently its structure was assumed to be glandular, whilst, now-a-days, more careful examination has proved that such structure constitutes but one-third of its entire bulk, the remaining two-thirds being composed of unstriped muscular fibre,—a knowledge of which fact is of the greatest importance in the treatment of its diseases, affording a satisfactory explanation of why it is that its enlargements should not be as amenable to the action of medicines of undoubted efficacy in the reduction of glandular swellings when situated in the other portions of the body. Every surgeon of experience knows how useless in the treatment of enlarged prostate prove the preparations of iodine, bromine, &c.; and how difficult, if indeed it be not absolutely impossible, to bring down to its normal bulk a chronically enlarged prostate gland.

In the work before us we find the diseases of the prostate preceded by an admirable resume of all that is at present known of its anatomy both relative and structural; the most modern views are set forth in the plainest yet most accurate manner; after which the Author proceeds to consider the most important of its diseases viz., acute prostatitis, gouty inflammation of the prostate, the irritable prostate, the senile hypertrophy of the prostate, and cancer of the prostate. All of these are succinctly yet faithfully described; and in the observations on these several diseases, the experienced surgeon will feel that the future practitioner will find in Dr. Hughes a safe guide in many an emergency.

In his chapter on acute prostatitis, in addition to an admira-

ble description of the disease, Dr. Hughes describes a new instrument of his own invention for applying leeches to the rectal surface of the prostate gland. This instrument appears to be possessed of many advantages, and to be fully capable of discharging the duty expected of it. In his chapter on senile enlargement of the gland, Dr. Hughes gives us a table founded on the pathological specimens in the Museum of the College of Surgeons in Ireland, that goes a long way to support Sir E. Home's views as to the relative frequency of enlargement of the right and left lobes of this gland, a point on which M. Mercier differs from that eminent authority. Sir E. Home taught, that the left was the lobe more frequently enlarged, whilst M. Mercier insists that it is the right. On examining this table, we find but three specimens in which the right lobe was enlarged, whilst there are eight in which the left was the portion enlarged; whilst there are four others in which the left and middle lobes were enlarged; thus, making up twelve cases in which the left lobe was enlarged, against three in which the right was the portion affected.

Dr. Hughes enters into the consideration of the question as to the influence exercised by old age in inducing this affection, giving us a summary of a paper read by Dr. Henry Thompson on this subject, before the Medico-Chirurgical Society of London, from which we learn, that, though a disease of advanced life, still, that old age is not *necessarily* subject to it, this, we believe, had long been the opinion entertained by most surgeons of any experience. That an enlarged prostate may be expected in many cases of stricture in advanced life, is certain; but to state that it is always present, is undoubtedly to state what is not the fact; and that this opinion is the correct one is now established beyond cavil by post-mortem statistics.

We cannot conclude our remarks on Dr. Hughes' work without expressing our opinion that it is the production of an educated and observant surgeon, and one that we can most confidently recommend to the attentive perusal and consideration of our readers.

1. *Bidrag til den obstetriciske Pathologie.* Ved DR. F. C. FAYE, Professor i Accouchement ved Norges Universitet, Overlæge ved Födelsstiftelsen og Börnehospitalet i Christiania. 1859. 8vo, pp. 48.

*Contributions to obstetric Pathology.* By DR. F. C. FAYE, Professor of Midwifery in the University of Norway, Senior Physician to the Lying-in Institution, and to the Children's Hospital in Christiania. Reprint from the Norsk Magazin for Lægevidenskaben.

2. *Beretning om Födelsstiftelsen i Christiania i Aarene 1855, 1856, og 1857.* Ved DR. F. C. FAYE, &c.

Report of the Lying-in Institution in Christiania for the years 1855, 1856, and 1857. By DR. F. C. FAYE.

3. *Förslag till Lag angående sundhetsförhållandenas ordnande i riket, i underdånighet afgifvet den 17 Juni, 1859 af den för ändamålet i nåder förordnade komité.* Stockholm, 1859. 4to, sdd. 95. Kritiskt Referat af DR. C. G. GRÄHS. 8vo, pp. 39.

*The Project of Law, relating to the Management of Sanitary matters in the Kingdom, respectfully submitted on the 17th of June, 1859, by the Committee appointed for the purpose; critically reviewed.* By DR. C. G. GRÄHS. Reprint from the Hygiea.

I. In the first work in the above list, Professor Faye presents his readers with some valuable and interesting cases in obstetrical practice. We can here do little more than enumerate these cases. They are:—

1. Rapid occurrence of death after delivery, in consequence of the rupture of an ovarian abscess.

The patient, aged 29, primipara, of highly nervous temperament, had suffered for several months from a fixed pain in the right side; she spent a month in the Lying-in Institution prior to her delivery; inhaled chloroform during the labour; and was delivered, with the forceps, of a large living female child. She felt pains, during the night, in the lower part of the abdomen and back. Next morning the abdomen was rather tender, and the intestines were slightly distended with air; the pulse was 128, and small. The face was pale, with an appearance of depression; the pulse increased in rapidity; the patient got no sleep, and died in 53 hours after delivery. On post-mortem examination, the right ovary was found to have burst, and the slight remains of it were reduced to a



pulpy detritus. The fossa Douglassi was filled with a thin, red, purulent effusion. The kidneys were degenerated; there was apoplexy of the right lung. The author concludes some remarks on the foregoing case, by showing that the ovary may burst during delivery, even where no abscess exists, a fact important in a medico-legal point of view.

2. Rupture of the uterus during delivery, caused by a sharp margin of bone over the symphysis ilea pubis sinistra (*Acanthopelys*, *Kilian*). The portion of bone in question was a couple of lines in height, and three or four lines in breadth.

3. Rupture of the uterus and urinary bladder after difficult labour, with turning, in a case where the arm descended before the head; narrow pelvis.

The author states that, at the time he made the post-mortem examination of this patient, *Kilian's* then recently published work was not known to him, and the margin of the pelvis was not accurately examined. He thinks it very possible that, in this instance also, the crista pubis may have been sharp; and he suggests that in cases of rupture of the uterus, the margin of the pelvis should be examined, adding that we have, perhaps, too often contented ourselves with assuming that a slight degree of narrowing of the pelvis is the cause of the frequent ruptures in the lower segment of the womb.

4. Very tedious spontaneous delivery; pelvis narrowed in the first degree; aperture posteriorly in the portio vaginalis uteri, with a perforating opening through the curve of the vagina into the the peritoneal cavity.

5. Case of rupture of the fundus uteri.

6. Case of internal rupture of the uterus.

7. Diastasis of the symphysis pubis, in connexion with periuterine and pelvic cellulitis. On post-mortem examination, the separation was found to exist to the extent of an inch, the adjoining connective tissue being put upon the stretch, and the neck of the bladder having been separated from the wall of the pelvis. There was suppuration at the right side of the symphysis; along the horizontal ramus of the os pubis; the infiltration extending backwards in the connective tissue, in the broad ligament, and down on the neck of the uterus; the cartilage of the symphysis was destroyed. The pelvis was taken out, and preserved in the anatomico-pathological collection in the University.

8. Death occurring soon after an almost normal labour, and the employment of chloroform. The patient was unmarried; primipara, aged 35. Chloroform was inhaled, to a small extent, during labour. As, notwithstanding the violence of the pains,

the head remained stationary for several hours; the forceps was applied, and the head was with ease extracted. After the application of the forceps, and during the extraction, chloroform was again employed, and anæsthesia was produced during a short time. The patient returned to consciousness immediately, without, as is usual, lying for some time in a soporific condition. The pulse was 64. She slept for an hour. Subsequently she became more drowsy, and her face grew red. At midnight the pulse was 92. She was then quite conscious. At four in the morning she complained of slight shivering, with pain and heat in the head. Pulse 120. She afterwards lay like a person in a sound sleep; but was easily aroused when spoken to, and then complained only of faintness and weariness. At half-past seven her breathing suddenly became laboured and moaning; her face became cyanotic; only the second sound of the heart was heard; the pupils were contracted. She died, quietly, at a quarter past twelve, seventeen hours after the termination of the labour. On post-mortem examination, the liver and kidneys were found degenerated, and exhibited effusions of blood under their investing membranes; but nothing was discovered sufficient to account for death. The author is, therefore, led to believe that the chloroform, although sparingly and cautiously used, may have acted prejudicially in a person addicted to the abuse of stimulants.

II. For the report of the Lying-in institution in Christiania, we are indebted also to the distinguished Professor of Midwifery in the University of Norway. In the three years, 1855-1857, 644 children were born in the institution; twin-births occurring 11 times, or once in 57·54 deliveries. Of the children, 337 were boys, and 307 girls. 170 children were legitimate, 474 were illegitimate. 36 (23 boys and 13 girls) were still-born. Of the still-born children, 6 were legitimate, and 30 illegitimate. The proportion of still-born to the total number of births was, therefore, 1:17·88. Among the legitimate children, this proportion was 1:28·33; among the illegitimate, it was 1:15·80. Including two children who died during the first twenty-four hours, these proportions become respectively 1:28 and 1:15. Of the still-born children, 10 were the offspring of unmarried mothers, who had suffered from constitutional syphilis, and had been treated for this affection. It would appear that syphilis is diminishing throughout the country in general, but in one parish (Selbo) it has for several years been extremely prevalent; the local hospital there has, however, been abolished, and the patients are sent to Throndhjem.

"What share any decided variety of treatment may have in the above result, is difficult to say; but that mercurial treatment has, in general, been employed in most hospitals in the country, is certain. Another remarkable fact connected with this subject is, that the radesyge, allied as it is, or perhaps analogous to syphilis, has everywhere so remarkably diminished, that it is now reported as being comparatively rare. In this disease, too, mercurial treatment has, for many years, been most frequently employed in combination with so-called blood-purifying decoctions."

In reference to the question of the effects upon the children of diseased mothers, of subjecting the parents to the mode of treatment termed "syphilization," the author quotes the experience of Dr. A. Holst, who says that it has been stated to him that several children, born in the Lying-in Institution, of mothers who had undergone the treatment by inoculation with chancrous matter, had been still-born, or had subsequently exhibited the disease; as had also been the case with some in the division of the Royal Hospital appropriated to diseases of the skin, and to syphilis. It appears that of six children lately born in the institution, of such mothers, four were still-born, or died immediately after birth, while two were apparently in good health. The latter were, however, subsequently attacked, —one in the city, where it died; and the other, during its stay in the Lying-in Institution, which was prolonged, to give an opportunity of watching the child. In pointing out the difference between the so-called immunity obtained by syphilization, and the true immunity obtained by vaccination, the author informs us in a note, that (contrary to advice we, on a former occasion, ventured to give him), he has recently, in his own person, tested the immunity of persons vaccinated with respect to variola. During a slight epidemic of variola, which prevailed in the spring of the present year, Professor Faye, having first re-vaccinated himself, in the presence of some of his colleagues inoculated his arms and thighs three several times with the matter of genuine variola, from three different individuals, one of whom was an unvaccinated child. "The effect was the production of some small papulæ, which quickly disappeared, without giving rise to any general affection. This is true immunity." "No true analogy exists, in fact, between vaccination and syphilization; for when the former has been performed once, or at most twice, with good matter, the immunity, both of the skin and organism, will be general. A constitutionally-syphilitic person's skin is, on the contrary, susceptible of as many genuine soft chancres and furuncles as it

may be desired to produce; but the individual cannot receive the results of indurated chancre, because he already has them in his system, as true syphilitic poison; nevertheless, experience has latterly shown, and Ricord himself has acknowledged, that a person, cured of the disease by mercury, may again receive indurated chancre and syphilis. In other words, the syphilitic individual has become sound, and again susceptible to fresh infection; while the vaccinated and variolated individual has also become sound, after having undergone a change in his system, but is, thereafter, for a long time, really immune, with respect to fresh inoculation and fresh infection. This, therefore, makes the great and important difference; and, consequently, the immune vaccinated and variolated mother gives birth to healthy children; while the actually immune syphilized or syphilitic mother produces diseased children, so long as she is immune, with respect to the disease, but suffering from its influence in her ovaries and internal system.

“With reference to the effect of mercury in syphilis, the parish of Selbo may serve for an example. Various forms of constitutional syphilis have there, for a series of years, been so frequent, that it was found necessary to establish a provisional hospital. In this parish, the number of still-born children in the years from 1854 to 1858 was 34 (of which 3 were illegitimate) in 694 births—that is, 1 in 20·4. For the whole kingdom, the proportion in the ten years 1846–1855 was 1 in 23·5. The difference is, therefore, inconsiderable; and Selbo is even better than some other districts, where syphilis was not constantly prevalent. As the number of still-born children may vary considerably in one and the same parish, and the proportion in two of the above years, 1857 and 1856, was in Selbo so favourable as 1:26·6 and 1:29·5; the estimation of the sanitary condition of the infants, so far as this depends on a syphilitic dyscrasia in the parents, and its treatment, will be with more certainty based on the mortality in the first year of life, since, as is generally acknowledged, most of the children are born alive, and subsequently show signs of the presence of the dyscrasia. In the same parish of Selbo, among whose married population syphilis has existed more extensively than anywhere else in Norway, the ratio of mortality in the first year of life has, for the above-mentioned four years, been 1:16·1. This proportion is exceedingly favourable, as the mortality is only half that of the whole of Norway, during the ten years, 1846–1855. Now, when it is remembered, that the mortality of children, in the first year of life, in Norway (1:8·9) is highly favourable as compared with that in other



countries, this proportion for the syphilitic parish of Selbo is really remarkable, and bears advantageous testimony of the good effect of the remedies used. Mercury cannot, in truth, have been a "diabolical" medicine, as it has been called in our Magazine of Medical Science; and, so far as posterity is concerned, it seems better adapted to counteract the curse which rests upon the parents' sins, than the more modern methods,—whose followers are not satisfied with praising these, but, at least in some cases, condemn all, even the most conscientious efforts to use mercury in a successful manner. On reviewing each year separately, it appears, moreover, although there is a difference in the particular years, that in none of these years has the mortality in Selbo been as great as the average mortality for the whole land (1:8·9). Thus in 1854 there died in the first year of life,—of 178 children born alive, 14 = 1:12·7; in 1856 (there is no statement for 1855), of 171 born alive, 8 died in the first year = 1:20·4; in 1857, of 154 born alive, 6 died, = 1:25·6; and in 1858, of 157, 15 = 1:10·5; the mortality, therefore, even in the most unfavourable year, is less than that in the whole kingdom taken together."

Professor Faye concludes his very interesting report with a series of statistics, exhibiting the ages at which menstruation first occurred in a given number of cases; the interval between each menstruation in 309 cases; the duration of each menstruation in 287 cases; the influence of suckling upon menstruation; the duration of pregnancy in a certain number of instances, &c. The details will furnish much valuable information to the practical obstetrician.

III. Dr. Grähs' pamphlet, which is in itself a review, is an important contribution to the subject of sanitary reform. The author appears to be well acquainted with our English official reports, and with the works of British writers on the topic of his critique.

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*Advice to a Mother on the Management of her Offspring.* By PYE HENRY CHAVASSE, Esq., F. R. C. S. London: Churchill, 1860. Fifth Edition. Fcap. 8vo, pp. 255.

It would seem that we have already exercised our critical pen upon a portion, at least, of this work, when reviewing Dr. Barker's "brochure" on a similar subject in May, 1859. Our readers are, probably, aware of the discreditable squabble which took place soon afterwards. Dr. Herbert Barker was unques-

tionably wrong in quoting from Mr. Chavasse's work without acknowledgment; he was wrong also in not instantly acknowledging and apologizing for the wrong. Mr. Chavasse, or his solicitor ("qui facit per alium, facit per se"), was rude in his mode of application to Mrs. Barker, in her husband's absence; and the anger generated by this proceeding blinded Dr. Barker to the course he ought to have adopted. Matters, however, were not to end so simply; the medical men of Birmingham entered their protest, and the Branch of the British Medical Association expelled Dr. Barker. We think it was before this latter occurrence that Dr. Barker made a full and ample apology; but, notwithstanding, the Branch refused to reinstate Dr. Barker. We have, in our simplicity, been accustomed to think that, when an offender makes a sufficient apology, he should be forgiven; but if, in addition, he has been severely punished, the offence may surely be forgotten.

Mr. Chavasse, we hope, will take in good part our suggestion, that he should allow the matter to drop into oblivion; he has vindicated himself, and punished Dr. Barker; and to carry the matter further would scarcely be like a gentleman or a Christian.

We have read through Mr. Chavasse's book, and agree with most of his suggestions. The advice is just such as might be expected from a sensible man, well acquainted with hygienic and sanitary laws and their application. The form of question and answer is, in some respects, convenient for popular use; and in this catechism we have included advice concerning the food, nursing, washing, exercise, &c., of infancy, with a notice of the chief ailments, so far as may enable the mother to recognise them, but nothing beyond the simplest treatment. The author, very properly, advises that active treatment should only be authorized by a medical attendant. But the volume is not limited to the necessities of infancy; it embraces the general and special management of childhood and youth.

It is rather difficult to analyze a book of this general character; and we shall content ourselves with pointing out a few sections that we think very good, and recommending the book itself to our readers. The remarks upon the clothing of infants are good, though we do not quite agree with the author in limiting the use of caps. We have seen much more mischief than good in the habit which now prevails of abjuring them. We quite agree with the author in the propriety of putting the child early to the breast, provided that it be not repeated so often as to make the nipples sore before the milk comes. He advises that for six months the child should have no other food than

mother's milk, if the mother be sufficiently strong. In most cases, however, we have found it of advantage allowing one meal (from the feeding-bottle) a day, just to accustom the child, as it may happen from various causes that the mother may be unavoidably absent at the time when baby ought to get his drink. The section on the best food as a substitute for nursing, is exceedingly judicious, and so are the directions for choosing and dieting a wet-nurse, except that we should think his moderate diet rather high feeding in this country.

The notes on the various minor complaints of infancy and childhood are sufficient for the mother's guidance, without qualifying her to supersede the doctor.

We quite agree with Mr. Chavasse's indignation at the present mode of dressing children, both boys and girls, and also in his objections to stays—would that we might hope his arguments would banish them. But fashion is the Juggernaut of civilized society, under whose wheels whole hecatombs are crushed.

Exercise, diet, sleep, clothes, wounds, bruises, and accidents, all in turn occupy the author's attention; and, if they are carefully read and observed, we are sure that the rising generation of Birmingham will have to thank Mr. Chavasse.

Incidentally, also, much good advice is given for the prevention of disease in young persons, as to choosing a profession, and the over-exertion of the intellect, with which we cordially agree.

We have said enough, surely, to recommend this little volume, and we should be glad to see it largely circulated among all classes.

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*Academisch Proefschrift over Ulcus Noma.* DOOR ADRIAAN JACOB VAN ZADELHOFF. Utrecht, P. W. van de Weijer. 1860. 8vo. pp 56.

*An Academic Thesis on Ulcus Noma.* By A. J. VAN ZADELHOFF. Illustrated with two plates.

THE author gives two very good drawings of the formidable disease he describes,—one exhibiting the extent of its ravages in his seventh case; the other representing the head of a child who died with *ulcus noma* of the upper lip, cheek, and nose, and showing the facial and fifth nerves exposed.

Two of the branches of the facial nerve, directly lost in the gangrenous part, were swollen, and quite red, with injected ves-

sels; the bone beneath the orbit was completely stripped of its periosteum, and was in a state of necrosis. The infraorbital nerve proceeding thence towards the sphacelated part was entirely surrounded with fat, so that it was difficult to separate the nervous twigs from the adherent adipose substance.

On opening the skull, it was found that the root of the fifth nerve on the left side was quite brown to its insertion into the pons varolii, in consequence of an exudation and effusion of blood, which on this side completely filled the entire sinus cavernosus. This brown colour extended over the Gasserian ganglion, and the three branches issuing from it. The sixth nerve, also, was very red, and the space between the two was filled with coagulated blood. The corresponding parts on the right side, as well as the optic nerves and their decussation, appeared to be healthy.

"On microscopic examination, it appeared that the nerve fibres of the infra-orbital, after its exit through the foramen, were everywhere surrounded with fat granules, while the primitive filaments were all in a state of decided fatty degeneration. The nerve-root, which on the left side throughout exhibited a brown colour, was likewise in a state of fatty degeneration; everywhere around the nerve-tubes themselves numerous fat granules and longer fat cells appeared. On the right side this fatty degeneration was by no means absent, but it existed in a less degree; in the nerve-tubes were several granules, which had not yet so strongly coalesced to form longer fat cells. Around the nerve-tubes, and between them, several fat globules were, however, scattered.

"From all this it would appear that the degeneration had attacked the infra-orbital nerve chiefly in its peripheric portion; that the affection was more marked on the left side, where, moreover, *ulcus noma* usually begins; that this degeneration seemed to have penetrated from the periphery to the centre through the root, particularly as on the right side the degeneration of the nerve external to the infra-orbital foramen seemed to differ little, or not at all, from that of the left side, while the root of the fifth nerve on the right side was less decidedly affected than on the left.

"But the discoloration of the nerve of the fifth pair on the left side, and the great filling up of the left cavernous sinus with blood, which had here everywhere exuded, were very striking.

"The remarkable fact, that *ulcus noma* almost always attacks the upper lip, so far as the branches of the infra-orbital nerve extend, appears to indicate that in the origin of *noma*



this nerve plays no unimportant part. Froriep, too, found the infra-orbital nerve degenerated external to the foramen. The facial nerve can contribute less to the disease, as being a motor nerve, which does not terminate in the skin; the two branches of this nerve, which were in the present instance tolerably inflamed, were precisely those which are connected with the infra-orbital nerve, and receive from it recurrent sensitive filaments. In *ulcus noma*, the affection is confined chiefly to the skin and mucous membrane, and exactly in these parts do the branches of the infra-orbital nerve terminate.

“It is remarkable that such a degeneration and gangrene of so extremely sensitive a nerve should take place without pain.

“The nerve itself was affected with fatty degeneration, which fatty degeneration occurs wherever a part is dissolved or in process of destruction; so, softening of the nerves, as has often been observed by my esteemed promotor [the distinguished Professor Schroeder van der Kolk], is accompanied by fatty degeneration.

“It would thus appear, particularly if we bear in mind the universally admitted observation, that *ulcus noma* occurs principally where mal-assimilation of blood, improper diet, and debilitating causes, especially measles, operating chiefly on the process of sanguification, have preceded, that the first pre-disposing cause of this malady is to be sought in a peculiar condition of the blood and fluids. It seems as if in this state the second branch of the fifth pair is preferentially affected, although *ulcus noma* sometimes also occurs in the sexual organs. It is not very easy to account for this; but it may be supposed, that where the blood is in a dissolved state, and combined therewith, the nervous energy is weakened, congestion and stasis arise in the cavernous sinus, as at least in my case took place to a great degree, on the left or more affected side; that the nerve, through insufficient nutrition, for want of pure arterial blood, passes into paralysis and decay; while, not improbably through the infiltration of fluid and fatty degeneration, the infra-orbital branch, running through such a long, bony canal, is so compressed, that the weakened and relaxed walls of the capillary vessels, being closely pressed on, can no longer nourish this nerve: whence it might be explained why the infra-orbital nerve is preferentially the most affected. In this way, also, we may understand how the abuse of mercurials may give rise to *ulcus noma*, as mercury appears to act chiefly on the salivary glands, and therefore also on the nerves of the fifth pair, and to occasion a solution of the blood.

Thus, by increased exudation of watery blood, swelling of the nerve, gangrene, fatty degeneration, and ulcer noma, may be produced.

“As to the blood-vessels, we here meet with the same change which ordinarily occurs in gangrene. Both arteries and veins are filled with a plug of coagulated blood, which adheres so firmly to the walls of the vessels, that it cannot be driven out by injection, but prevents the further progress of the latter. Hence, the parts whither the blood-vessels repair, are no longer supplied with blood, and die. Consequently, the vaso-motor nerves, which proceed from the fifth pair to the blood-vessels, here again, most probably, play a very important part.”

We have quoted rather fully from the author's observations on the pathological anatomy of the affection which he has chosen as the subject of his academic thesis. The other points connected with this formidable disease are treated of, in his essay, in an equally able and interesting manner.

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*Traité des Tumeurs de l'Orbite.* Par M. DEMARQUAY. Paris: Victor Masson, 1860. 8vo, pp. 584.

THIS rather considerable octavo, spread over the surface of 584 pages, is devoted to the consideration of all tumours of the orbit, whether *arising in it* or *encroaching on it*, with the exception of all such tumours as have their origin in the ball of the eye itself. It is divided into four books, each subdivided into chapters, and again re-subdivided into sections. For its compilation, the author has amply availed himself of the researches of others, upon whom he draws much more freely than on his own experience. He, however, frankly acknowledges it throughout his book, and even adds, at the end, a copious list of the sources to which he is indebted, and which includes no less than 142 names.

He arranges all tumours in four classes, viz., tumours having their origin externally to the cavity of the orbit; tumours of the areolar tissue of the orbit; tumours of the orbit proper. A book is devoted to the consideration of each, and a fourth book contains a sort of recapitulation of the others. A more unsatisfactory arrangement could not have been conceived—indeed, we do not profess even to understand it; for it seems to us that tumours of the areolar tissue of the orbit must of necessity be tumours of the orbit proper.

The subdivisions of each book are equally prolix and unnecessary: for instance, chap. 2 of book iii., which is devoted to the consideration of bloody tumours, is divided again into two

sections—1st, tumours by extravasation; 2nd, aneurismal tumours; section 1st being again re-subdivided into four sub-sections:—

- A. Effusions of blood, result of fractures.
- B. Effusions of blood, result of penetrating wounds.
- C. Effusions of blood, result of contusions.
- D. Spontaneous effusions of blood.

We need not proceed further, as this is a sufficient illustration of the present instance of book-making.

We have, however, read the book (no easy work); but we cannot say we have derived much instruction from it. While on the subject of syphilitic exostoses of the orbit, he quotes Carron du Villards, who extols the preparations of gold in the treatment of them. We have no doubt of their efficacy in cases of secondary and tertiary syphilis; we have watched their administration in several Continental hospitals, and have been well pleased with the results; and we cannot help regretting that their use seems to be entirely ignored in this country. The supposed high price is no excuse of their non-adoption, because, though at first sight gold appears an expensive remedy, yet, as the medicinal doses are exceedingly small, they fully reduce it to the average cost of ordinary remedial agents.

Speaking of serous cysts of the orbit, the author remarks that the presence of hydatids in them, although denied by Mackenzie, is not uncommon; and he imagines that much of their supposed rarity depends on their having escaped detection. He gives credit to Mr. Lawrence for having supplied one of the first well-authenticated cases of orbital hydatids.

Having exhausted the subject of serous cysts, he passes to the consideration of what he calls "*Hydropisie de la Bourse fibreuse de Tenon*"—a disease which, though a frequent cause of exorbitism, is not, according to our author, found described in any of the existing works on ophthalmology, and the first notice of which is due to M. Carron du Villards, in 1858.

Before proceeding with one of his cases, which we intend giving *in extenso*, we wish to premise that this "*Bourse fibreuse de Tenon*" is no other than the tunica vaginalis oculi, first described by O'Ferrall, many years ago in the 19th Volume of this Journal, 1st series; as also to express our doubts as to its being a true sero-fibrous shut sac, rather than one of those anatomical structures that, with a little careful manipulation and ingenious dissection, we were in the habit of exhibiting in the dissecting-room. Here is the case, as extracted from M. Carron du Villard's "*Memoir sur l'Exophthalmie*," in the "*Annales d'Oculistique*, 1858":—

"In 1842, a girl, aged 17, presented herself for advice, suffering from considerable exophthalmos, accompanied by very severe pain whenever she bent her head forwards and downwards, as also whenever the eye was pressed backwards, with a view to restoring it to its original place. The eye itself seemed to be everywhere embraced by a firm tumour, without any alteration of the conjunctiva or the cornea, but with absolute loss of vision. Believing it to be a case of fibrous tumour completely surrounding the eye, we recommended the removal of the entire mass, which was filling up the orbit; and at once performed the operation without previously trying an exploratory puncture. As the operator gave the last stroke of the scissors to divide the optic nerve, a quantity of straw-coloured liquid ran out, and *the eye at once resumed its natural form*. But it was then too late to attempt to save the organ, and the operation was completed.

"On the eye being placed under water, it at once acquired the form it possessed previous to the operation, and on carefully removing it from the water, the fluid was found to run out by an opening situated inferiorly and corresponding to the fibrous ring from which arises the 'Bourse de Tenon.' On further examination, the eye was found perfectly healthy, but surrounded by a sac as far as the junction of the cornea with the sclerotic; and which, having been distended by fluid, had given it the appearance it had previous to the operation."

Carron du Villards has several times since met with this affection, which he has successfully treated by puncture. It appears to him to be intimately connected with some forms of eruptive disease, as every case he has met with had come on after measles or scarlatina. The treatment recommended is as follows:—The eye having been fixed by the usual means, and turned inwardly, a fold of the conjunctiva, including the bourse of Tenon, is pinched up, and incised with a pair of blunt-pointed scissors. As the fluid runs out, the eye will have at once a tendency to resume its place in the orbit; but that must not be permitted until a few shreds of charpie have been introduced into the wound, and which are to be left in for twenty-four hours, at the end of which time a sufficient degree of adhesive inflammation will have been established to insure a radical cure.

The most prominent fact which we gather from the foregoing melancholy story is, that, in the year 1842, M. Carron du Villards did destroy the eye of a girl 17 years of age. We cannot even add, *secundum artem*; for who would, at the present stage of ophthalmic surgery, proceed to remove the entire contents of the orbit for a case involving only the globe



of the eye? In this country we are happy to think that such a mishap could not occur; as, even should the surgeon have made a false diagnosis, and mistaken a serous cyst for a fibrous tumour, and determined to remove the eye, the very first incision made to separate the muscles of the eye from the globe itself would, by wounding the sac of Tenon, have revealed the nature of the case.

While on the subject of malignant disease, the author tells us that, up to this, it has not been the subject of any special study. This at first surprised us, till, further on, we were reminded that cancer arising primarily from the intraorbital tissues is rare; that it commences oftener in the ball of the eye itself; and, as diseases of the eye do not come within the scope of his book, he passes it over in silence.

At last we have arrived at Book IV., which treats of orbital tumours in general. These are the principal causes the author recognizes as tending to produce them:—Syphilis, cancer, and penetrating wounds. Cancer is, however, much the least frequent; while, among penetrating wounds, the most frequent are those arising from *umbrella thrusts*. This fact he mentions more than once, thus revealing to us a previously unnoticed idiosyncrasy in our lively neighbours and faithful allies, viz., of having a tendency to poke out each other's eyes with umbrella sticks.

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*Small-pox and Vaccination, Historically and Medically considered: an Inquiry into the Causes of the recent increase of Small-pox, and the Means for its prevention.* By ALFRED COLLINSON, M. D. London: Hatchard and Co, 187, Picadilly. 1860. Pamphlet, pp. 85.

UPWARDS of half a century has elapsed since the introduction of vaccination. The efficacy of cow-pox infection as a prophylactic against variola was, at first, most justly, an object of jealous scrutiny. The *experimentum crucis* having been applied at every step of the investigation, after a most rigorous trial, its protective power was placed beyond a doubt; the laws of its phenomena were fully and, it was supposed, finally established; the practice of vaccine inoculation was generally adopted; and the minds of a former generation were set at rest, so far as regarded variola. Strange, then, that at so distant a period from the date of its first universal employment, we should find ourselves, at the present moment, in a perfect fermentation on the subject of vaccination, both as regards its principles and practice.

The recent epidemics of small-pox in this and the sister country have, it appears, shaken the faith of the people in the protective power of cow-pox. The profession, on the other hand, still convinced of its efficacy as a prophylactic, is divided into two sections with respect to the cause of the recent varicellous outbreaks. One segment accounts for them in the deterioration of lymph, consequent on its transmission through so many beings. Whilst the other—and perhaps with more propriety—deems that these untoward events were due to the number of persons who remained in an unprotected state, because of an imperfect system of public vaccination. There exist, doubtless, some extraordinary characters amongst us who will be found to ignore vaccination altogether. “Allowance,” says Simon, “must be made for personal eccentricities, which—in respect of vaccination, as of every other subject—have ever caused solitary voices to be raised against the common convictions of mankind.” These are, fortunately, so few, and so insignificant as a class, that we take no cognizance of them.

Be the cause of the recent brushes of small-pox what it may—whether deterioration of lymph, the mal-administration of vaccination amongst the masses, or anything else that human ingenuity can suggest—one thing is certain, which is, that Government must take the vaccination of the empire into its own hands. Such being the general impression amongst the profession of every grade, we find ourselves daily inundated with all manner of publications on the subject. Some of these are written on the plea of pure philanthropy; others with the apparent intention of exposing the defects of existing institutions, but, at the same time, exhibiting the capabilities of their various authors for remedying those defects. All have a tendency to attract the attention of the powers that be, to the humble individuals who so modestly obtrude themselves. In this latter respect the pamphlet under consideration, however, assumes no disguise. It is addressed to the Right Hon. the Earl of Granville, Lord President of Council, &c., “by his Lordship’s favour and permission, by his obedient and humble servant, Alfred Collinson.”

The “purpose of the following pages” was, of course, not to address the Earl of Granville; on the contrary, it was “*to develope, if possible, the causes of the increase of small-pox, and to point out the means whereby vaccination, its only sure preventive, may be restored to its PRISTINE<sup>a</sup> efficacy.*” To accomplish this, the author finds “it necessary to trace the history of

<sup>a</sup> The capitals are our own.

small-pox and that of vaccination in (*sic*) its various phases," and we would add, send the sketch to the Earl of Granville.

We are informed that "a mass of observations and experiments on the important subject of small-pox and vaccination has been collected by numerous observers and inquirers; but it is scattered over an infinity of histories, treatises, reports, and statistical returns, for the most part unknown to, or inaccessible to, the general public." Therefore, in the small space of 85 pages—indeed, we may say of little over 60—the author, to his own satisfaction, at least, condenses the subject from "an *infinity* of histories, treatises, reports, and statistical returns," to present the public and a noble Lord with a perfect, yet compact, treatise on vaccination. A great desideratum truly! Oddly enough, however, we are informed—and who is ignorant of it? that "a perfect mine of knowledge and information on this subject *has been collected* by Mr. Simon, the medical officer of the Privy Council, and communicated by him in his valuable report on vaccination to the Board of Health in 1857, in another general report in 1858, and a shorter one to the Privy Council in 1859."

Now this excellent, complete, and succinct account of the origin and progress of vaccination; of the ravages of small-pox anterior to its introduction; and the benefits conferred on mankind after its adoption, is accessible to all who may wish to consult it, especially so to the Earl of Granville. This is indeed *the "mine"* from which all the pamphleteers on vaccination draw their materials, and the one which the author, in common with them, has availed himself of.

In this noble report of Simon's, the following passage occurs:—"Looking then to the whole succession of answers, and describing, in a few words, what to myself has been the effect of perusing them, I would say—above all—I am struck with their concord. Two hundred and thirty years have elapsed since Harvey first taught the circulation of the blood. The first announcement of Jenner's discovery was within the adult-memory of men still living; yet, I believe, that questions addressed to the governments of Europe, and to 542 professors and practitioners of medicine, with respect to the older truth, basis though it has long become of all physiological teaching, would not elicit more unanimous replies than these which record the triumphant successes of vaccination. It can be no common certainty which commands so general an assent. It can have been neither a truthless nor a barren doctrine, which within sixty years from its rise, has all but universally satisfied private judgment, and has converted nations to be its grate-

ful followers." Surely no language could more simply or forcibly attest the value of vaccination, or, as a consequence, the danger of its omission, or mal-administration. And from Simon's report at large, it strikes us, one could have no difficulty in arriving at "a sound opinion" on the subject upon which it treats. Yet, we learn, that the author's "end will be sufficiently attained, if he can *succeed in fixing attention*—more especially that of persons in authority—on the danger to which the country is exposed, and the means of averting it." "The only merit," he continues, "I can venture to claim is, that of having collected and supplied from various sources materials from which a *sound opinion* may be formed as to what is necessary to be done. If I have succeeded herein, my labour will be amply rewarded."

The "ends" of pamphleteers are always expressed, but generally understood differently from their expression,—whether correctly, or the contrary, may, of course, be a matter of question. Here we have an author of a pamphlet, written for the end of "fixing attention—more especially, that of persons in authority," upon a subject on which their attention *has been* repeatedly, forcibly, and *officially* drawn by the medical officer of the General Board of Health. We can only say, that if Mr. Simon's brilliant efforts have failed in *fixing attention* of persons in authority upon the vaccination question, we can scarcely hope for such a desirable consummation from Dr. Collinson's publication.

But we had better not "go too fast;" we must remember that this pamphlet has been addressed to one in authority, by "the favour and permission" of that individual. Therefore, it may occur, that what Simon's work failed in accomplishing, Collinson's shall happily consummate.

Let us now look into the contents of this opusculum. We find, upon a close perusal, that it contains nothing with which we were not before acquainted; and but little that the general public could not learn from any popular cyclopædia of the present day. There is some matter, certainly, relative to vaccination acts, &c.; but with these every poor-law guardian is intimately acquainted.

The subject of the antiquity of small-pox, "whether it was known to the ancient world, and, if so, to what extent," first engages our attention; and Rhazes, Hippocrates, Galen, Hahn, Willan, Barron, *et hoc genus omne*, are brought before us, pretty much in the same order as they appear in Dr. Gregory's article, "Small-pox," in the Cyclopædia of Practical Medicine, edited by Forbes and Tweedie.



The author, keeping in view his end, quotes Mr. Simon, to show that *people in authority* are not exempt from variola. How "a sad illustration of its impartial severity is to be found in the family of *our own* King William III." How his father and mother; his wife, his uncle, and his cousins, fell victims to small-pox; how even his own royal self was not respected by that loathsome disorder,—his constitution having been permanently shattered by it. Mr. Simon's version of this historical fact could not have had the same effect as Dr. Collinson's narration of it. In this country there are some who think that variola showed much too great a deference to his majesty's family in sparing himself. The old story of Lady Hester Stanhope, and the introduction of variolous inoculation, its imperfections and danger as a practice: and we are brought to the eighteenth page.

Next we have Jenner, and the origin of his inquiries concerning cow-pox; a brief account of the inductive reasoning of Jenner; the vaccination of the boy Phibbs from the hand of Sarah Nelmes, and the subsequent testing; the opposition to the practice of vaccination, and its final establishment; the question, what is the vaccine disease—and we arrive at the forty-fifth page.

Then comes the effect of vaccination after its general adoption, as shown by statistics taken from Simon, which brings us to the fifty-first page.

The remainder of the pamphlet is the only portion to which we shall direct particular attention; but, before doing so, we would observe, that all the subjects which have been briefly recapitulated above, are almost, as briefly handled by the author. Badly compiled from one or two sources, and infinitely more curt than any chapter on vaccination from an ordinary medical class-book, or almost any article we have read in popular publications touching on the subject.

Dr. Collinson now essays "to develop the causes" of the increase in the mortality from small-pox; he feels "persuaded that the present severity of small-pox, and the impermanence of vaccination, cannot be considered as accidental circumstances, and that we cannot inquire with too much anxiety or earnestness into the causes which have induced this lamentable state of things." Four causes are assigned by the author, viz., "bad vaccination; deterioration of the lymph used in vaccination, from long descent; the want of an adequate supply of good vaccine matter; and the absence of Government interference, and of efficient legislation to enforce the universal practice of vaccination." Bad vaccination, the want of adequate material,

and absence of sufficient government control, may come under the head, we would say, of mal-administration of vaccination—as one cause for the recent outbreaks of variola; and deterioration of lymph is presumed by some to be the other. Thus, Dr. Collinson's causes may be reduced from four to two. But we shall proceed with the author. By bad vaccination is, of course, to be understood, the want of knowledge for the discrimination of the proper vesicles, and ignorance of its phases at certain periods; the absence of careful supervision; the choice of imperfect or unfit virus; or the insertion of perfect virus at an improper time—in short, as our author very properly observes, the practice of vaccination contrary to the directions laid down by Jenner. Of this, there can be no doubt. There is no practitioner who would not feel offended, if informed that he was ignorant of the principles and practice of vaccination; and yet there is no branch of medicine concerning which so much ignorance can be found amongst the profession. We have ourselves witnessed eminent practitioners deem vesicles fit to take from, for the purpose of ingrafting, which Jenner would certainly have discarded. The majority of medical practitioners (so far as this country is concerned) never saw a vaccine vesicle, or its progress through its different stages, till the first vaccination they themselves performed, when appointed to their respective dispensaries. We therefore agree with Dr. Collinson that bad vaccination is a fruitful source of absence of protection. We are glad to see, however, that the English College of Surgeons are endeavouring to remedy this evil, by demanding a certificate of instruction in vaccination from candidates for their diploma; and we trust our own Colleges will follow such an excellent example.

Concerning the deterioration of the vaccine virus from continuous transmission, the author mentions the difference of opinion existing among members of the profession; with which we are, of course, acquainted. He quotes Simon on this point, also, who, though he refrains from offering a decided opinion of his own, yet says, "It is difficult to conceive how the infantine generations of a country could, crop by crop, successfully derive less permanent constitutional impressions from vaccination, unless the efficient cause of those impressions—the vaccine contagion itself—had year by year undergone enfeeblement of its powers." But it happens, as the author also informs us, that the National Vaccine Establishment, in their annual Report in 1854, state that it is "A fallacy to predicate the necessity of resorting to the original source of the cow for a re-

newed supply of lymph." Now, as Mr. Simon, from his own resources, and from the opinions of others, ought to know something of vaccination, and as the National Vaccine Board must likewise be considered a very high authority on the same, and yet it is found that the former speaks with doubt, and the latter with certainty, relative to the question of deterioration of lymph,—when one of these great authorities can scarcely come to any other conclusion, than that vaccine has, year by year, undergone enfeeblement; and the other positively states that the necessity of its renewal is a fallacy,—the author modestly remarks—"non nostrum est tantas componere lites." Dr. Collinson, however, arrives at the very natural conclusion, under such circumstances, to the following effect: if there be a doubt, there can be no harm in having a recurrence to the cow; it is in our power to inoculate cows with variolous matter, from which we can obtain a renewed vaccine, wherewith to infect the unprotected. This method has been already frequently recommended; we have no objection to accepting it, but there is nothing new in the suggestion, and this is Dr. Collinson's great remedy to reduce vaccine to its pristine efficacy.

The defective supply of vaccine infection, as a cause of want of protection, is next mentioned; here we are favoured with an extract from a minute of the Board of the National Vaccine establishment, of Nov. 17, 1858, as follows:—

"That, in 1838, the number of vaccinations performed by this national establishment was, 18,659; that during the three years, 1850–52, the annual average number was, 10,713; that during the three years, 1854–6, the average number was, 8207; and that in 1857, the number was 6327; and that while the operation of successive laws has reduced the number of vaccinations, from which lymph has been supplied to the public, the demand for lymph has been increasing; that ordinarily the vaccine establishment distributes about 215,000 charges of lymph; but that, under the influence of peculiar circumstances, the demand has risen to about 320,000 charges—an amount nearly 60 per cent. higher than was supplied in 1838, when the sources were nearly three times as numerous as they are at present."

Upon this the author observes, and very justly—

"From this important statement of the National Vaccine Establishment it seems impossible to doubt that the general effective vaccination of the country must have suffered materially from the crippled resources of this valuable establishment. It is even not impossible that their limited power of selection, under the pressure of so great a demand, may have led them to arm their charges from vesicles which a more extensive supply of subjects would have permitted them to refuse."

Now, though all this may be very true, and supposing the National Vaccine Establishment had been the unwilling means of diffusing doubtful lymph; if vaccination was properly conducted, equivocal results from this uncertain source could have been detected, and measures adopted to revaccinate such suspicious cases, till all uncertainty was removed. Were vaccination properly conducted, this great demand would never have been made on the National Vaccine Institution. So that the imperfect protection cannot be said to *depend* so much on defective supply, as upon the inefficient, careless, and improvident method of conducting public vaccination, in addition to the want of administrative interference; and this brings us to the fourth cause of malprotection, as mentioned by the author.

With respect to legislative interference in relation to vaccination, the author gives examples in the enactments of foreign governments, making the practice compulsory; and showing the benefits accruing therefrom.

The zeal of the Continental legislatures in this respect far surpassed that of our Government, the sole act of which, up to the year 1840, was the establishment of the National Vaccine Institution (England), in 1808. This institution had no powers to extend the practice of vaccination; and, till 1840, England was indebted for public vaccination to the zeal of medical men, or to the charity of the public.

Three years prior to 1840 it was held that "an overseer was not bound to take measures to procure the poor children of the parish to be vaccinated during the prevalence of small-pox." During the three years "of this charitable (?) vaccination, prior to 1840," the author states, "there occurred thirty-six thousand deaths from small-pox; and three-fourths of those who so died were children under five years of age, who had never undergone the operation."

Dr. Collinson next mentions the two Acts of the Legislature, viz., the one providing "that vaccination, at the public cost, might be claimed of local authorities in every parish in England and Wales; and that this gratuitous vaccination should not place its recipients in the position of persons receiving parish relief;" and which failing, the other, or the compulsory Act of 1853.

We shall quote his statement of the working of this last Act:—

"In 1854, the public vaccinations of England, at all ages, exceeded by more than 75,000 the total number of births. The result of this act was, that the deaths from small-pox reached an



average of only 152 per million of people. But in 1855, the number of vaccinations declined; and in 1856, it was still further reduced. *The misfortune was, that no public officer was appointed to carry out the provisions of the Act. There being no one whose duty it was to enforce the penalty, its coercive effect was soon lost.* It is more than probable," he continues, "That if its commands had been enforced with firmness by a proper officer, *there would be few unvaccinated persons at the present time, and the mortality from smallpox which has recently occurred would have been materially smaller.*"

This is most true. The Legislative enactment is insufficient, and this insufficiency is a great cause of imperfect protection. Thus Simon, in fewer words, though more forcibly, has previously taught us—"In short," he says in his great Report, "it is a radical defect in the Act, considered in its compulsory relations, that the duty of warning defaulters, and the discretionary power of proceeding against them, are assigned to no proper officer or local authority; and that, consequently, the compulsory provision of the law *rapidly tends to be regarded as a dead letter.*"<sup>a</sup>

Now for Dr. Collinson's remedies; and first, as to "re-vaccination." The author argues that, as its necessity is a matter of doubt, the benefit should be given to the doubt, and re-vaccination adopted after puberty, as a precautionary measure.

Next, there should be "good vaccination;" that is, the operation should be carefully and skilfully conducted by medical practitioners who are really competent to undertake it; and lymph should be husbanded, when perfect, most carefully.

Lastly, the defects of the Act should be remedied; and if faith has been lost in the present stock of vaccine infection, a new supply should be created by the variolous inoculation of the cow.

We have now given a pretty full review of Dr. Collinson's pamphlet, and confess we have not been edified by its perusal, as we have previously led the reader to believe. It is a wretched compilation, unnecessary, even was it otherwise, after that unsurpassable Report of Simon. We again assert, if that masterpiece of a Report from the Medical Officer of the Board of Health has failed to impress the public *and the powers that be* with the importance of vaccination—if that has not shown us the defects of the present system of vaccination, as regards England—and if from it, there cannot be obtained suggestions for the better protection of the people from variola—surely Dr. Collinson's gleanings can be of no avail.

<sup>a</sup> *Vide* "Papers relating to the History and Practice of Vaccination," Simon p. lxxii.

Having now disposed of Dr. Collinson's pamphlet, which relates altogether to the vaccination of England, it may not be out of place to make some observations upon the system of vaccination as adopted in Ireland.

In this country, the vaccination of the people is under the complete control of the Poor-law Commissioners. Vaccination districts have been mapped out in the various dispensary districts throughout Ireland. In each of these, the "Medical Officer" (as the vile phrase runs) has to attend at stated periods, and vaccinate all who come to him for that purpose. The names of those in whom lymph has been inserted are entered in a book provided for the purpose; and the result of the operation subsequently mentioned. Apparently, all is most perfect and excellent. To render still further impetus to vaccination, the ardour of the medical gentlemen in charge of these districts is, in a wonderful manner, stimulated by the recent Act—21 and 22 Victoria, cap. lxiv., passed in August, 1858—whereby the munificent sum of *one shilling!* for each *successful case* is promised to him, provided, however, that he returns no less than *twenty* such cases!

Prior to the passing of this Act, vaccination could scarcely be said to exist in Ireland. Now, as the results of this twelve-penny charm, we are presented by the Poor-law Commissioners with the following cheerful and satisfactory state of affairs. Alluding to this Act, viz., the 21 and 22 Victoria, cap. lxiv., the Commissioners, in their last Annual Report, observe, that having been "now in full operation for nearly a year, we are able to speak with some confidence, from experience of its operations, respecting the efficacy of the Act." And they then present the highly gratifying result of 140,411 vaccinated for the year 1859.

Could we rely upon these 140,411 cases for the year 1859 as *genuine*, the retrospect would, indeed, be gratifying, so far as the working of the Act, and the vaccination of the country were concerned; but, on the other hand, a melancholy one, as regards the profession. In its latter bearing, it would be the exemplification of a principle of homœopathy, viz., the greatest amount of stimulation by an infinitesimal quantity of the element 'argentum.'

To our mind, however, this Act has proved hostile to the progress of vaccination, as we shall presently show; and injurious to the profession, holding out, as it does, a temptation—villanously low though it be—to the unprincipled, for all manner of dishonesty.

In order to show that our opinion is correct, let us consider

how vaccination should be conducted, in a purely medical point of view. The subject seems so trite, as to be unworthy of much attention. Indeed, its apparent simplicity has, to a considerable extent, been the origin of carelessness. However, to conduct vaccination with benefit to the public, we consider the following rules are essential:—

The insertion of the lymph must be accomplished with care, and without haste.

The infection used must be taken from a fit source, and introduced into the system of those only who have no contra-indication for vaccination present.

The recipient must be seen on the *eighth and twelfth day*.

No case should be *positively considered successful, unless seen on the eighth and twelfth day, and found "natural" on each inspection.*

A very slow vesicle on the eighth day should be tested from itself—that is, some of its contents inoculated on a fresh place near it, or on a spot upon the other arm, and the result observed on the sixteenth day; and if the result is not then "natural," re-vaccination should be at once performed, and further inspections should follow.

A vesicle which, when seen on the eighth day, presents a rubbed or injured appearance, should be seen on the twelfth and sixteenth day, as well as on the eighth; and if not in a state that could be vouched for at its last inspection, it should be reckoned doubtful, marked as such in the register. The arm should be again inspected in a few weeks; and if the cicatrix is then found unsatisfactory in appearance, re-vaccination should be performed, to test the former attempt.

All this, to be done, faithfully and well, would require no common skill and attention; it would entail considerable trouble and consume much time.

Any district in which such a system was not adopted we would consider to be imperfectly vaccinated; and in the returns of such a district we would put no faith.

Is such the method adopted in the vaccination of the inhabitants of the various districts throughout Ireland? How many vaccinators can conscientiously swear that every case returned by them as successful, and for which they have been paid, was a *bonâ fide* case of successful vaccination? Did they see them all on the eighth day, and if so, was every case so seen genuine and perfect in its appearance; were none rubbed; were none slow; were none doubtful? If some of those seen on the eighth day were slow, some rubbed, and some doubtful,

*were all these returned indiscriminately as successful cases?* Has any public vaccinator in Ireland seen, one-fiftieth part of those he saw on the eighth day, and marked successful again on the twelfth day? if so, have they found none of them *then* rubbed? If they have, those so rubbed, were then doubtful; and those that they had only seen on the eighth day, though natural then, could not be vouched as successful.

These are grave questions for the Poor-law Commissioners of Ireland to ponder on. We fear, the more they are revolved in the minds of those outside the Commissioners' Board, the less faith will be placed in the return of 140,411 vaccinations in the country for 1859. That their returns are unreliable, so far as one locality, at least, is concerned, has been already incontrovertibly proved.

It is humiliating to see a member of our profession found guilty of gross dishonesty; and yet the instance recently exhibited in Athlone Union is, we fear, not the only one that could be found in Ireland, were a searching investigation instituted. Here we have, in truth, an example of both the working of this Act, and the method in which the vaccination of the people is, it is to be feared, to a very great extent conducted.

For certain reasons, an inquiry was held by one of the Poor-law Medical Inspectors, at the direction of the Commissioners, regarding the accuracy of the vaccine returns of the surgeon in charge of the Brideswell dispensary district. We shall quote the following passage from the Commissioners' letter to the Board of Guardians of the Athlone Union, containing their comments upon the evidence given during the investigation, as reported by Dr. Hill, the medical inspector; and removing Dr. O'Connell from his situation:—"It appears clearly from this report, that of 286 cases presented by Dr. O'Connell in his vaccination report, as having been successfully vaccinated by him in the first four months of the year 1860, no less than 64 were found by Dr. Hill, upon personal inquiry, and upon the testimony of trustworthy witnesses, to have been falsely entered in the vaccination report; and there is no doubt that these false entries were made by Dr. O'Connell for the purpose of increasing the amount of the sum payable to him by the board of guardians, at the rate of one shilling for each successful case of vaccination. It further appeared, on examination and comparison of Dr. O'Connell's vaccination reports for the year 1859, and the vaccination register for that year, that although he had, on the strength of his reports, received payment from the board of guardians for 800 cases, the whole number entered



on the register was only 579. These facts having been established by extraneous evidence, Dr. O'Connell's own statements on the subject were submitted, and are to the following effect—viz., 'That as to the difference between the number in his reports and the number entered on the register for 1859, he could only account for it by a number of sheets having been removed from the register, which had not been always in his possession; and he had no other mode of accounting for the difference. That although it is set forth in the register that all the persons vaccinated in 1859 were observed by him on the eighth day after vaccination, such statement was not correct, as it is difficult to get the people to bring back their children for the purpose, particularly if the vaccination succeeds. That he certified the success of the operation without having examined the persons vaccinated on the eighth day, as required by the Commissioners' regulation, of which he was aware; and that he did so from his experience of the fact that when the operation was successful, the parents are unwilling to bring back the children, lest the lymph should be taken from their arms. That the majority of those vaccinated did not return; and that he had no certainty as to the success of the operation in these cases as to the number returned as successfully vaccinated since the 1st of January last—viz., 286.' That number, Dr. O'Connell admits, is not a true statement. He entered in the list, he says, the names of persons whom he had not vaccinated this year, and the names of persons who are not residents in the townlands stated. 'I believe,' he says, 'there are the names of persons on that list who are not in existence at all. I think there are about one-third of the entries false.'

So far as this case is concerned, there can be no doubt but that the Act, of which the Commissioners have now about a year's experience, is hostile to the progress of vaccination, and injurious, as holding out a temptation to peculation.

We have often been amused at the recollection of the story of the medical gentleman who, to swell his vaccination list—under this Act—vaccinated *one* "Murphy" on both arms, but took credit for *two* "Murphies" in his register; calling the right arm Paddy, and the left Jemmy. This tale we once considered a mere *jeu d'esprit*—a good joke, without foundation; but after the above revelation, we are warranted in believing that it was not overdrawn.

We are ourselves cognizant of a system of vaccination adopted in a certain region of our green island, which it may be well to notice. Here the surgeon's *wife* does the home work,

while the surgeon and *the gamekeeper* of the lord of the soil take the out-duty, and the surgeon's daughter keeps the registry. As to whether any are again seen or not after the operation, that is a matter of secondary consideration. One thing only is certain, and that is—that they have been “cut.”

That this unreliable system of vaccination exists, as a general rule, throughout the country, we could adduce many witnesses to prove; one only we shall now introduce, inasmuch as, while he fully bears out our assertion relative to the working of the Act, he appears in bright contrast to the melancholy example of turpitude before noticed. In a communication to the “Medical Press” of October the 10th last past, alluding to this unfortunate *exposé* at Athlone Union, he says:—

“The account of the humiliating conduct of the medical officer of the Brideswell Dispensary, Athlone Union, as published in a late number of the ‘Medical Press,’ relative to vaccination, confirms me in the opinion I have always held of the inefficiency of the present law on that subject, and of the regulations which the Poor Law Commissioners have made for carrying the law into effect. I have at different times stated to the Medical Inspector of this district (a gentleman I have always found very courteous and friendly) my conviction that the present Vaccination Act would turn out to be a complete failure, inasmuch as it was founded on wrong principles. Making the amount of remuneration to the medical officer depend on the number of *successful* cases of vaccination, holds out a *bonus* to unprincipled persons to make false returns (and unfortunately the medical profession is not without its black sheep), and I greatly fear such returns are not confined to the Brideswell Dispensary. I cannot believe it possible that the great number of successful cases I see stated in different returns can be correct, unless there be a very great difference in the mode of attendance from what it is in this locality—I mean with respect to the proportion of children brought back for examination on the eighth day. *In my district scarcely one-half of those vaccinated are brought back for examination; AND OF THOSE THAT ARE BROUGHT BACK, ALL ARE NOT SUCCESSFUL CASES—AT LEAST ONE-SIXTH ARE EITHER SPURIOUS OR FAILURES. It is very probable that many of the cases not again seen have been successful, but the surgeon cannot vouch that they have been so.*

“There is no reason *à priori* why the surgeon, if he be paid by the number of cases of vaccination, should not be paid equally for every case, as he has much the same trouble in the unsuccessful, or those not again seen, as in the successful. The operation and entry in the vaccination registry give equal

trouble in each; also the examination of those that return, and entry of the result in the registry, is equally troublesome in each; the only difference is the vaccination on the second arm, which, I think, ought to be performed in all unsuccessful and doubtful cases on the eighth day. But it is very derogatory to men of a respectable profession to be paid in such a manner for their professional services; and from the commencement I have declined any payment for vaccination either at the dispensary or out-station. *I told the dispensary committee and the board of guardians that I would perform all the required duties with respect to vaccination, but that I would act gratuitously while the law continued in its present state; and I have always given to the Poor-law Commissioners, Board of Guardians, &c., correct returns of the numbers vaccinated, with the result, as far as I was aware of it, whether successful, doubtful, unsuccessful, or not again seen. I know that the medical officers of some other dispensaries adjoining mine have acted similarly. If all the medical officers of dispensaries would act in the same manner, I think there is little doubt but that a law more efficient and less offensive than the present one, would be passed.*"

The question may now be fairly asked, of the 140,411 cases of vaccinations, so exultingly produced by the Poor-Law Commissioners as a brilliant example of the Shilling Remuneration Act, how many may be relied upon as secured against small-pox?

On a rough calculation—but, from many sources, we are certain our estimate shall be found but a too favourable one—we may take one-half as never having been seen, and one-sixth of the half seen as either spurious or doubtful; thus, there would then be about 58,500 reliable cases, and about 81,900 of the 140,411 going about the country in an unprotected state. What follows? Many of these 81,900 must contract small-pox; but as they have the name of having been vaccinated, the people are led to the conclusion that there is no protective power in cow-pox, seeing that so many of their neighbours who, in their estimation, have been vaccinated, take the small-pox. Why blame the working classes, when they then conclude that they would rather undergo inoculation with the natural pock? To what other conclusion could THEY be expected to arrive? Many disreputable persons shall be found ready to strengthen this opinion so naturally formed; the variolous inoculator shall have a fair field to labour in, and small-pox shall again revel in its pristine frequency and intensity.

It is absurd to assert that all those who are not presented

for inspection on the eighth day may be considered as successful cases; and this, by the way, is the "flattering unction" laid "to the soul" by those who falsely return such cases as successful. How can it be possible for even the best educated and most intelligent peasant to form a correct opinion on a subject, upon which, so many of the profession are incompetent to judge.

Such, then, being the system of vaccination in Ireland under the administration of the Act, 21 & 22 Vic., c. 64, according to the directions of the Poor-law Commissioners,—no other conclusion can be arrived at, than that the said Act is worse than a failure. It must tend to destroy all faith in the protective influence of cow-pox, by sending abroad thousands of persons whom the public *assume to be vaccinated* (having gone through the form), yet who really never have been vaccinated, and are necessarily fit recipients for variolous poison. This system, moreover, holds out an inducement to the unprincipled to swindle the public, and is thus pernicious, not only as an injury to the cause of vaccination, but as tending to demoralize a portion of the profession, rendered, alas! easy victims to temptation from straightened circumstances. We may then say, as regards vaccination in this country, that we are worse off than if we had no Act—and the question follows,—What do we require?

First, an extension of the registration of births, marriages, and deaths' Act to Ireland; followed by, second, a compulsory Vaccination Act, as in England; but free from its errors, proper provision being made for carrying out its penalties.

Above all, it would be well that the vaccination of the country should be taken from out of the control of the Poor-law Commissioners. The vaccination of the people should be free from eleemosynary contamination. Government should take the matter altogether under her own control. Provincial inspectors should be appointed; vaccinators, who really know how to conduct vaccinations, should have the charge of the various districts throughout Ireland; and a responsible board should supervise. Payments to all engaged in the vaccination of the country should be liberal in a stated yearly sum, *not a beggarly pittance, doled out according to the numbers vaccinated*. The salaries to the vaccinators, &c., should be paid out of the Treasury, and "rate-payers" and "poor-law guardians" should have no voice in the matter. To protect the people from variola, *as they ought to be protected*, must cost a considerable sum; but no expense should be considered too great for the preservation of life and health.



As to the maintenance of the stock of lymph, it should be made compulsory, when deemed by the physician or surgeon indispensable, for the people to afford infection for the benefit of others. Then, with the aid of a central vaccine institution in the metropolis, and the universal adoption of Dr. Husband's method of preserving lymph by means of capillary tubes—a most useful and beautiful invention, to which we alluded on a former occasion—very little trouble would be experienced in maintaining a full supply. When the vaccination of the country has been conducted in perfection, it will then be time to form an opinion as to the necessity of renewing the lymph. Until an universal and perfect system has been adopted, no true opinion can be formed. We would venture to predict, however, that, with a well-arranged and properly-superintended system, it will be found that the virus, as it at present exists, is perfectly protective, and that it has lost none of its pristine virtues.

*Della Odierna diminuzione della Podagra e delle sue Cause Saggio di Patologia Storica.* Del Dr. ALFONSO CORRADI, Professor di Patologia nella R. Università di Modena.

*On the Diminution of Gout in the present Age: a Memoir of Pathological History.* By Dr. A. CORRADI, Professor of Pathology in the R. University of Modena. Bologna: Gamberini. 1860. 4to, pp. 58.

THE title of this pamphlet at first considerably surprised us, as we had not at all remarked that during late years gout had assumed a retrograde course, or had, indeed, become less virulent in its attacks; but we had not proceeded very far, when we discovered that the talented Professor of the University of Modena was drawing comparisons between *ancient* and *present* times, and not between less distant periods of more modern days.

The best way we can convey to our readers a correct idea of this interesting pamphlet will be by giving ample extracts from it, which we shall endeavour to do in as nearly the author's words as the difference of idiom will permit.

Taking it for granted that gout is now a much less common disease than it was at the commencement of the Christian era, and during the dark ages of the Lower Empire, the author commences by saying, in the first page of his memoir:—"Ancient diseases pass away, while new ones take their place; mild ones become severe, while deadly forms of illness assume a milder character; sporadic diseases become diffused; epidemics

become circumscribed; and that because either in man himself, or in his outward conditions and relations, such changes take place, or such new combinations, that the older pathological states either change in character or disappear altogether."

Nothing truer. Disease not only changes its character, but sometimes disappears altogether. Where is now the plague which in the middle of the fourteenth and seventeenth centuries desolated the fairest portion of Europe? What has become of that syphilis which, in 1496, decimated the armies of Charles VIII. at Naples? We cannot recognize it in that disease which still continues to be a source of so much suffering in the present day. What has become of that dire sweating sickness which desolated Great Britain in 1485? They have passed away, and new types of disease have taken their place. Even in our own days we have seen a perfect change come over the nature of disease. Where are now the fevers that used to be cured by bleeding and low diet? And even pneumonia, which, a few years ago, was the most sthenic of sthenic affections, is now so altered in its character, that rarely, if ever, even in the largest practice, does one meet with cases requiring depletion?

At page 6, the author quotes largely from the "*Tragopodagra*"—a celebrated comic poem, written by one Lucian, about the year 120 of our era, who seems, from his vivid description of the disease, to have been himself a victim of gout.

"Neither did the Jews escape this affliction," says the author; "and Alexandria, Athens, and Rome, the three greatest and wealthiest cities of the world, suffered beyond description from its visitation. Ptolemy Philadelphos was a martyr to gout; and Celi<sup>us</sup> Aurelianus says that gout was endemic in the capital of Egypt, which must surely have been the case, if even the labourers suffered from it, as would appear to have been the case, from a letter of the Emperor Hadrian to the Consul Servianus. In Rome it was a common disorder, and most of the principal citizens suffered from it. Sylla, Augustus, and Claudius, were martyrs to it; Galba was so crippled by it, that he could not put on his calzarii, nor open a scroll, nor hold anything in his hand; and Seneca, fully aware that he could not be cured, was happy if able by any means to alleviate the severity of its attacks. There have been some who, rather than suffer the agonies of this disease, have preferred to lose their feet,<sup>a</sup> and some even their lives.<sup>b</sup> No wonder, then, if, in trying

<sup>a</sup> C. Plinii, *Hist. Nat. Lib.* xxv. Edit. Aug. Taur.

<sup>b</sup> Philostratus' *Lives of the Sophists*, Lib. i. (Polemonius).

to subdue so painful and obstinate a complaint, the physicians of those times invented the most extraordinary mixtures, and the patients resigned themselves to swallowing the most disgusting remedies."

"Hippocrates," who flourished about 400 years before Christ, "had asserted, in his aphorisms, that eunuchs, women who still menstruated, and youths who had not yet sacrificed to Venus, did not suffer from gout;" but Seneca, about 500 years later, "complains that in his time even the women lost the hair off their heads, and suffered from pains in their feet;" and Galen, about the middle of the second century, "asserts that the eunuchs suffered from it as well as the rest of mankind."

"About this time Diocletian passed the law, which exempted from office and personal service those who were severely afflicted with gout. At Constantinople, during the Lower Empire, gout was extremely prevalent, and the Emperor Heraclius, Michael Parapinaceus, Constantinus Monomachus, Alexis Angelos, suffered severely from it. The celebrated Anna Comnena praises, in the life of her father, the Emperor Alexis, the tender care of her mother, in endeavouring by gentle frictions to assuage his agonies. It was about this period that the disease obtained a new name, and the barbarous epithet of *gout* was added to the more ancient name of *podagra*,—which new name some derive from the German *gicht*, *gichten*, which means, agonizing pain. The rapid cure of so formidable a disease was looked upon as beyond the powers of ordinary physicians," and special saints were invoked by the Christians for its relief. "St. Augustin, in his work, '*De Civitate Dei*,' tells us that, in his time, those sufferers who prayed to St. Stephen, Martyr, were always cured. We also learn from the '*Acta Sanctorum*,' that many recovered their health after praying at the tomb of St. Thomas Aquinas. We are told, also, in the same *Acta*, that St. Mark, Bishop of Treveri, who was greatly venerated as a curer of gout, used to be invoked by the following hymn:—

'Nam spasma, arthritica, chiragra  
Contractis quibusvis, et podagra  
Mire opitularis,'—(*Acta Sanctorum*, Die xvi. Januari.)

"Pope Honorius IV., in 1285, summoned to Rome Thaddeus of Florence, a celebrated physician, who required and obtained one hundred ducats a day<sup>a</sup> for his services. Vladislaus IV.,

<sup>a</sup> An enormous sum, considering the great difference between the value of gold now and then.

King of Poland, gave six thousand pieces of gold to a peasant for a supposed specific against the gout. Pontanus said: 'Hæc (Podagra) conflicti sunt Philosophi et Principes et Reges et Imperatores;' and Sydenham comforted himself and his companions in misfortune by asserting that 'Divites plures interemit quam pauperes, plures sapientes quam fatuos.'

"Gout, which, as we have endeavoured to show, was so common in ancient times, has now become generally so rare that we may look on it as almost extinct. Even in England, its most favoured locality—the country of Sydenham, who suffered so acutely from it, and wrote so ably about it—it has considerably diminished; and the celebrated Owen, when questioned upon this subject, has confirmed our opinion, and promised documentary evidence, which, I trust, will soon reach me. In Holland, also, and in Belgium, where in Boerhaave's time gout was most common and frequent, it has now become rare. Professor Serrano, Secretary to the Academy of Medicine in Madrid, also assures me that gout is much less frequent in Spain than it was during the past century. The same I hear from Genoa, Milan, Tuscany, and the Marches. I should have wished to strengthen my assertion by figures and statistics; but the difficulty, or rather the impossibility, of getting such, compels me to rely on the information received from friends and colleagues, whose truthfulness I have no reason to doubt. From England alone, where every fact is noted, taken into account, and rigidly investigated, could I have obtained the necessary information; and I am anxiously looking forward to some statistical tables of Dr. Farr, which I hope to add as an appendix to this memoir."

We thank Dr. Corradi for his good opinion of British statistics; and, no doubt, most deservedly do they hold a high position on the Continent. He adds, further, that, on consulting the obituary tables of England, France, Germany, and Italy, he rarely finds deaths from gout recorded. Canstatt's *Jahresbericht* scarcely mentions gout; and Hirsch, in his late work, *Handbuch der Historisch-Geographischen Pathologie*, asserts beyond all doubt that gout has greatly diminished. The author does not deny that, probably, many arthritic disorders were recorded as gout by ancient authors; but he adds: "Lucian's description of this disease so exactly tallies with the masterly account given of it by Sydenham, that it is impossible not to recognise them as one and the same complaint."

Professor Corradi is of opinion that the diminished intemperance of the present age is the principal cause of the dimi-



nution of gout. "We have no idea," says he, "of the gross excesses of the ancients both in eating and drinking. 'Vomunt ut edant, edant ut vomunt,' said Seneca. This disgusting habit was so common in his days, that it was almost considered a want of courtesy, if a guest did not void his stomach before commencing a repast. Cæsar vomited before reclining at the table of Cicero; and that celebrated orator, describing Anthony, says: 'Tu istis faucibus, istis lateribus, ista gladiatoria totius corpori firmitate, tantum vini in Hippia nuptiis exhauseras ut tibi necesse esset in populi Romani conspectu vomere postridie?'<sup>a</sup>

"Drunkenness was so common in the time of Charlemagne, that he passed laws which condemned to the *rod* those priests who should be convicted of it, and compelled the judges to attend the Courts fasting; 'rectum autem et honestum videtur ut iudices jejuni causas audiant et discernant'<sup>b</sup>.

"Charles V., though tired of being emperor, was not tired of good living; and, though a martyr to gout, when in the retirement of the monastery of St. Justus, would not pay any attention to the exhortations of his friends and attendants, who often used to remind him of the old Spanish proverb: 'La Gota se cura tapando la boca'<sup>c</sup>; and he had so decided an aversion to fasting, that he obtained a dispensation from Pope Julius III. to abstain from it, even when he was going to take the Communion."

Without saying too much for our present habits, I think we must all agree that such excessive intemperance has been long unknown; and even within the last sixty years, a good step has been taken in the right direction. Professor Corradi thinks, also, that in the middle ages, in consequence of the unreclaimed state of the land throughout Europe, people were compelled to feed much more on animal than vegetable food. The forests abounded in wild animals, whereas agriculture was scarcely attended to; and thus, animal food being much the most abundant, it was much more freely used. Vegetables were scarce in Great Britain, even in Elizabeth's reign; and Hume tells us that, in those days, a salad had to be imported from Holland. But, as agriculture increased, so the forests disappeared, and the supply of animal food diminished; and this has gone on progressively, till it has reached such a point in some Continental countries, that animals which we would consider as carrion

<sup>a</sup> Philipp. II. § 25. Edit. Aug. Taurin.

<sup>b</sup> Capitul Car. Magni et Ludovici Pii, lib. i. 60.

<sup>c</sup> The gout is cured by stopping up the mouth.

have been recommended as substitutes for butchers' meat<sup>a</sup>. In France, especially, has the want of animal food been so much felt, that it has been seriously proposed to manufacture a *species* of *meat* in the following way:—Cattle were to be kept in good pastures, and *bled* every week, or every fortnight, or as often as they could bear it, and to as great an extent as would be consistent with their safety, and the coagulated blood sold at a cheap rate as a substitute for meat!!!

The author is, then, of opinion that the present diminution of gout is due to the change in the habits of the nations of Europe. "In Constantinople, gout is unknown at present, though so common during the Lower Empire; but Mahometan sobriety has succeeded to the drunkenness of the Greek Empire: while in England, where much more meat is consumed, and more wine is drank than elsewhere, gout still is prevalent, though even there it is much less frequent than of old."

<sup>a</sup> See Proceedings of Les Hippophages.

## PART III.

### MEDICAL MISCELLANY.

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TRANSACTIONS OF THE BELFAST MEDICAL SOCIETY.  
SESSION 1859-60.

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JUNE 3, 1860.

DR. MURNEY, VICE-PRESIDENT, in the Chair.

DR. CORRY read the following *Case of Traumatic Tetanus successfully treated by Conium Maculatum.*

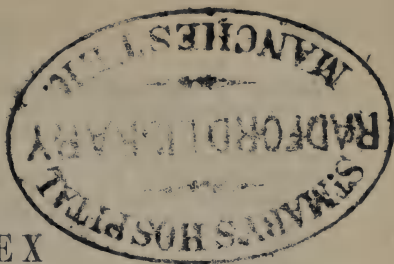
MARCH 26, 1860.—Was sent for to visit J. Russell, aged 55, manager of a spirit store, residing in Ballymacarrett. On my arrival I found him labouring under unmistakable symptoms of tetanus, which had set in two days previously; the paroxysms were frequent and severe, there was decided opisthotonos, with precordial pain, and the trismus was so great that he could only open his mouth to the extent of half-an-inch; there was, also, considerable difficulty in swallowing, and for the last twenty-four hours he had been unable to assume the recumbent position, from an agonizing sense of suffocation. Pulse, 115; skin, cool; bowels constipated. Upon inquiry, I ascertained that, about ten days ago, his left hand had been crushed between two casks, by which accident a severe lacerated wound had been produced; the injury, however, had, to all appearance, progressed favourably, and was now nearly healed.

Having previously had charge of two cases of this fearful malady, which I had treated unsuccessfully by the usual remedies, and having subsequently read M. L. Vella's communication to the Academy of Sciences, in Paris, on the employment of woorara in tetanus, and a paper by Mr. Spencer Wells on the same subject, I was anxious to give the poison a fair trial in the present instance, and accordingly endeavoured to obtain some for that purpose; however, not being able to procure any in Belfast, I took advantage of the suggestion thrown out by Dr. Radcliffe, "that conium, the physiological action of which is almost identical with woorara, might prove a more manageable and suitable remedy;" I, therefore, ordered my patient five grains of the extract every three hours, dissolved in water, having previously evacuated the bowels by an enema

of castor oil and turpentine. After the medicine had been administered for twenty-four hours, there was a decided improvement in the symptoms; he was now able to lie down, obtained a short sleep, and the spasms were less acute; the pulse, also, fell to 100. Forty-eight hours afterwards, the peculiar physiological effects of the conium began to manifest themselves; he complained of general debility, accompanied by numbness and loss of power in his lower extremities; the paroxysms occurred at long intervals, and were greatly diminished in severity; pulse 80. Ordered the medicine to be continued, with wine, beef-tea, and eggs, to support his strength. At the expiration of a week, complete paralysis of the lower extremities had been produced; the upper limbs were also much affected, and there was considerable difficulty in deglutition; the spasms and rigidity of the different muscles had now all but subsided; there was, however, still some trismus, and he slept but little; I had, therefore, to order him, in addition to the conium, an occasional night-draught of the solution of the muriate of morphia. By the end of a fortnight it was considered necessary to diminish the dose, and give it less frequently, as the muscles of respiration were becoming affected, the paroxysms had entirely ceased, and slight trismus alone remained. I now carefully watched the action of the medicine, and on the 21st day from its first administration was enabled to discontinue its use, as every symptom of tetanus had disappeared. A stimulating liniment was now applied to the limbs, with quinia internally, and in another fortnight he was able to return to business.

*Remarks.*—Notwithstanding the attention which has of late been directed to pathological investigations, our knowledge of the true nature of tetanus is, as yet, far from satisfactory; the disease consists of a peculiar excitement of the medulla oblongata and true spinal system, occasioning severe continued spasms of the voluntary muscles, followed by imperfect relaxations. Our line of treatment should, therefore, consist in removing local irritation, and allaying nervous excitement. So far back as 1811, Sir Benjamin Brodie demonstrated by experiments the powerful sedative effects of woorara in controlling muscular spasm; and in 1836, Mr. Curling stated, in his treatise on the subject, that the poison was deserving of a cautious trial in acute cases of tetanus in the human subject. However, the great drawback to its use is the impossibility of procuring it of uniform strength, and the consequent difficulty of regulating its action. In conium, we have a much more manageable agent, possessing all the sedative powers of woorara, without its disadvantages. During the treatment of the foregoing case, I watched its action carefully, and found, that by either increasing or reducing the dose, its effects could be proportionally augmented or diminished. It would, of course, be unfair to form a decided opinion of the curative powers of any remedy from the result of a single trial; but I must say, that, from the first, I found it so manageable and beneficial in its action, that I would have every confidence in again using it under similar circumstances.





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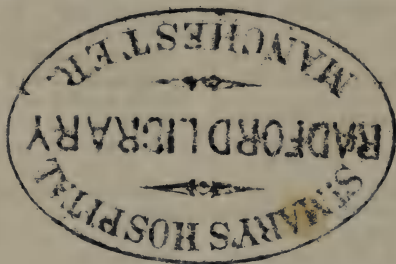


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